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PELVIC EVISCERATION FOR CANCER*

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THE SURGICAL APPROACH in treatment of pelvic cancer is not new. During the last 25 years, pelvic surgery has enjoyed periods of popularity and periods of disapproval, depending upon the site of origin of the cancer and also on the more or less successful results obtained.

Cancer of the rectum provided the occasion for the first evisceration of the pelvis,[1] but cancer of the rectum seldom necessitates extensive intrapelvic surgery, because when it is far advanced it has already given rise to distant metastases, so that any radical pelvic exenteration is futile. The same can be said about cancer of the prostate, early metastasis to bone being the normal evolution of this cancer in most cases.

Thus it is for cancer of the uterus, particularly of the cervix, that pelvic surgery has developed in the last few years. The results obtained by radiation therapy for cancer of the cervix improved steadily from 1930 to 1945,[16, 24] but are still far from satisfactory. The treatment gives around a 40% five year cure rate;[22] this leaves 60% of the patients dying of their disease.

This is an explanation for the re-evaluation of early surgical treatment for carcinoma of the cervix,[21, 29] with emphasis on the radical cure of the lymph node areas.[15, 23] It is as yet too soon to evaluate this renewed surgical treatment, though Brunschwig[9] recently had 50% of four and five year cures.

Cancer of the bladder offered another field of research for pelvic surgery. Total cystectomy was tried early for treatment of this cancer,[30] but the problem of diversion of the urinary stream was not solved so easily. After 100 consecutive cases of simple but total cystectomy, Marshall[20] concluded that this is not an extensive enough procedure for cancer, and that implantation of the ureters into the colon is not the final acceptable answer for the disposition of the urine. It is thus important to add to total cystectomy a thorough dissection of the pelvic lymph nodes.[19] This will no doubt improve the results, but still too many patients will die of pelvic cancer.

The problem of death from pelvic cancer, particularly of uterine origin, has attracted the attention of many surgeons and led Brunschwig[5] and others,, such as Parsons[25] and Bricker[4] to popularize complete exenteration of the pelvis. This procedure is rational if the autopsy findings in cases of pelvic cancer are considered. Distant metastases from cancer of the cervix are not frequent[17] and usually patients die from urological complications before the extrapelvic extension of their disease.[11] These urological complications may also arise from irradiation injuries after treatment and cure of carcinoma of the cervix.[27, 28]

To help these patients who will die from urological complications of intrapelvic cancer, noncontrollable by standard methods of treatment, it is now possible to perform a complete pelvic evisceration. It is now known that carcinoma of the cervix is the main indication, but it should be remembered that radiation necrosis might be a reason for this operation, and also that advanced carcinoma of the bladder should in the future be studied as a possible indication in the light of autopsy findings.[14]

It is noteworthy that the cervix and the bladder are lined with epidermoid epithelium, and that metastases from cancer of this epithelium are localized in the pelvic nodes for a long time, before they invade distant viscera. The same statement has been made about epidermoid carcinomas of the oral cavity. Their metastases remain localized in the lymph nodes of the neck in over 80% of cases.

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Thus the spread of epidermoid metastases is difficult in the internal viscera, a fact which gives radical surgery a good chance. Advanced pelvic cancer can only be eradicated by radical surgery, that is, by complete pelvic evisceration. The experience of Brunschwig,[5] of Parsons[25] and Bricker[4] and others has proved the value of this procedure in alleviating the sufferings of the patients and has also shown the possibility of a complete eradication of disease with five year cure. However this operation, like any pelvic operation, has met with many problems, the most serious being urinary complications.[26] The operative mortality is about 20 to 30% in the literature. The causes of death are lower nephron nephrosis, pyelonephritis and surgical shock.

Thus it seems that disposition of the urine is the vital problem, the more so because patients often already have infected or dilated urinary tracts. That is why the wet colostomy performed by Brunschwig was considered so dangerous by Bricker. This author utilized[3] a bladder substitution to dispose of the urine. He could thus avoid reinfection of the urinary tract by the infected colon and the psychological trauma following a wet colostomy.[2]

After considering the problem in all its aspects, it was decided to follow the method of Bricker in our cases and to construct a substitute bladder after complete pelvic evisceration. The last loop of ileum was utilized in preference to the cæcum. This was done in order to leave the patient with a complete right colon, so that he could acquire better colonic control with the Bowman apparatus.

An isolated loop of ileum was used, into which the ureters were implanted with a mucosa-to-mucosa termino-lateral[18] suture by the technique of Cordonnier.[13] The right end of this loop was exteriorized through a stab wound in the right iliac fossa. Hence, our operation consisted of a complete pelvic evisceration with section of peritoneum, ureters and sigmoid at the level of the promontory.

A paramedian abdominal incision was made and all intrapelvic viscera were isolated from the pelvic wall and delivered en masse, together with the anus and all external genitalia, through a perineal incision.

The sigmoid was exteriorized in the left iliac fossa. A substitute bladder was constructed as mentioned above. The gutters lateral to the colostomy and ileostomy were closed. The skin of the perineal floor was sutured in the midline, and a drain left in the posterior part of the perineal wound. The intestinal loops were left free to fall into the pelvic cavity and the abdominal wall was closed without drainage. Patients were left with two abdominal ani; a colostomy in the left iliac fossa and an ileostomy, the bladder substitute, in the right iliac fossa. A Bowman colostomy apparatus is used every day or every other day for colonic control, and a Rutzen bag is cemented on the urinary ileostomy, permitting the patients to remain absolutely dry and without any odour.

CASES

Four cases have been operated on by this technique since February 1952, and a fifth has been operated on by Dr. F. Roy with utilization of the cæcum as a bladder substitute. This latter case will be described first.

CASE 1

Mrs. E.H., 48, was first admitted to hospital in December 1952. She had a stage III carcinoma of the cervix, grade III. Irradiation treatment failed to cure her.

In June 1953, her condition was desperate. She was then examined by Dr. F. Roy who performed, on June 15, a complete pelvic evisceration with sacrifice of the left iliac vein. A substitute bladder was constructed by using the cæcum. The postoperative course was fair. The left leg was œdematous at first but improved steadily with time.

The patient left the hospital two months after the operation in very good condition.

CASE 2

Mrs. M.G., 32, first came to this hospital in December 1952. A biopsy revealed a carcinoma of the cervix, grade III, clinical stage II.

She had radium treatment in January 1953, followed in March 1953 by radical hysterectomy with lymphadenectomy and partial cystectomy. In August 1953, she was back at the hospital complaining of urinary complications. Examination of her urinary tract revealed a carcinoma in her bladder and a non-functioning right kidney. Operation was then decided on. On August 31, a complete pelvic evisceration was done. A right pyonephrosis was found, and her right ureter was brought out to the skin, instead of being anastomosed to the ileal bladder.

The postoperative course was uneventful and she left the hospital seven weeks after operation in very good condition. The right ureter eventually completely dried out.

CASE 3

Mrs. O.St.P., 31, first came to the hospital in February 1953. A diagnosis of carcinoma of the cervix, stage IV, was made. She was given radium and x-ray therapy, but the carcinoma was so far advanced that no hope whatever was entertained of cure.

She came back to the hospital in July 1953, with a subacute intestinal obstruction caused by the direct invasion of the rectum by the carcinoma. She was seen by us in August, and despite her very unfavourable condition operation was decided on. She was in a cachectic

condition, weighing only 80 pounds. Pyelography showed absence of function of the left kidney, and a hydronephrosis on the right side.

On August 24, a complete pelvic evisceration was performed. The postoperative course was uneventful. After seven weeks a perineal discharge of fæcal matter occurred; this was believed to be due to perforation of the lowest loop of the ileum. Laparotomy was performed in order to shunt the bowel and exclude the involved loop. She again survived the operation and is now doing fairly well, but the prognosis is poor.

CASE 4

Mrs. C.O., 42, was admitted to hospital in August 1952. A diagnosis of stage II carcinoma of the cervix was made. Histological examination showed a grade III carcinoma. She received a full course of irradiation treatment; consisting of intrauterine and intravaginal radium, followed by deep x-ray therapy applied to the pelvis by 4 portals.

In December 1952, the disease seemed out of control with complete obstruction of the left ureter. The blood chemistry was normal and no metastases could be found. On December 29, a complete pelvic evisceration was performed by the technique described above. No metastases were found. The postoperative course was very stormy.

The patient developed hepatitis probably of transfusional origin and had complete intestinal obstruction for six days but fluid and electrolyte balance was maintained and by the seventh day the bowels moved and afterwards the course was uneventful. She left hospital on March 17, 1953.

Her hospitalization was prolonged by the fact that she lives 500 miles away, and we wanted her to be very well before discharge. Recent news indicates that she is well and living a normal life—10 months after operation.

CASE 5

Mrs. A.G., 49, came to the hospital on January 20, 1951. A diagnosis of stage II cancer of the cervix was made. Biopsy showed a grade II squamous carcinoma. The patient was treated by irradiation, receiving intrauterine and intravaginal radium. A course of deep x-rays to the pelvis followed.

Her condition improved considerably, but after a while her health began to deteriorate again. In November 1951, she had a serious vaginal hæmorrhage, treated by transfusion, and at that time the carcinoma had invaded the bladder and the rectum. The patient went home.

On January 26, 1952, she came back with intolerable pain, necessitating daily injections. On vaginal examination, all intrapelvic viscera were found to be frozen in a hard, immovable mass.

Results of exploration of the urinary tract were surprisingly favourable. The blood chemistry was normal but her blood group was B, Rh-negative, a fact which presented a problem to the blood bank. On February 29, 1952, the operation was performed. The postoperative course was quite smooth except for transient jaundice caused by hepatitis probably of transfusion origin. Pyelography one month after operation showed a small dilatation of both ureters. Her blood chemistry remained normal. The patient was discharged on April 5, 1952, or 36 days after operation. She could then manage her colostomy and ileostomy alone.

Her condition improved steadily; she gained weight and performed her usual duties as a housekeeper, till September 1953. At that time an abscess developed in the perineal wound, which opened spontaneously. A draining sinus followed. She was admitted to hospital and under caudal anæsthesia the sinus was opened, followed and found to have its origin in a large intrapelvic cavity.

This cavity was completely isolated from the abdomen. Biopsy was done but no trace of neoplasm could be found. Healing was complete and she is living a normal life, 20 months after operation.

CONCLUSION

1. Pelvic evisceration can be performed safely with a low mortality, comparable to the mortality associated with other radical procedures.

2. Prolongation of life can be expected from the operation, provided that there are no distant metastases.

Since the delivery of this paper two patients died. Case 3 died of recurrence of her disease four months after operation. Case 4 died of intestinal obstruction (??) one year after her operation.

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RÉSUMÉ

Si l'exentération pelvienne n'est pas indiquée dans les cancers du rectum et de la prostate, elle peut par contre s'avérer satisfaisante dans les cancers de l'utérus et, plus particulièrement, du col. Le problème posé par la cystectomie simple n'est pas encore résolu. Le cancer du col se prête bien à cette méthode de traitement en raison de ses métastases longtemps localisées et aussi à cause des complications urologiques qui suivent souvent la thérapie par le radium. La mortalité de 20 à 30% qui suit l'opération provient surtout de néphrose de la partie distale du néphron, pyélonéphrites et choc chirurgical. La réinfection des uretères lorsqu'ils sont implantés dans le gros intestin a été contournée par Bricker, par la formation d'une vessie artificielle. Les auteurs ont suivi cette technique mais en employant une anse d'iléum plutôt que de prendre le cæcum. Cette structure communique d'un côté avec les uretères et de l'autre côté avec l'extérieur par une ouverture dans la fosse iliaque droite. Une incision abdominale paramédiane permet la mobilisation des viscères qui sont ensuite évacués y compris l'anus et les organes génitaux externes par une incision périnéale. Les malades restent donc avec une colostomie à gauche, une iléostomie et une vessie artificielle dans la fosse iliaque droite.

M.R.D.

ORAL HYPOSENSITIZATION BY OLEORESIN EXTRACTS

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IN THE PAST FEW YEARS evidence has been presented that contact dermatitis to plant oil oleoresins may be successfully treated by oral hyposensitization using the causative plant oleoresins. Fisher[1] reports on 18 cases of ragweed dermatitis of long duration treated by the oral hyposensitization method. Four patients followed up for five years noted clinical improvement, which was accompanied by reduction in reaction to the patch tests. Fourteen cases followed up for a shorter period of time seemed to be following a similar pattern. Slater *et al.*[2] believe that the treatment of choice of ragweed dermatitis is by the oral method, using ragweed oleoresin in corn oil. Brunsting[3] reports unsuccessful attempts at desensitization by injection of specific oils. Thomson and Thomson[4] review literature on immunization by the oral route. They believe that relief could be obtained in a fair proportion of cases of poison ivy sensitivity by giving the specific oleoresin by mouth. They also believe that the specific oleoresin is better given by mouth than by the parenteral route.

METHOD

In 1951 because of the unsatisfactory results obtained in plant contact dermatitis by injection of the protein fraction, we decided to undertake the treatment of a number of these cases by oral administration of specific oleoresin extracts. As a result we now have over 50 cases under treatment. The present report will deal with 19 of these patients who responded to a questionnaire mailed out to 28 who had been under treatment for a year or more.

Oleoresin patch tests were carried out on 17 of the 19. Routine protein scratch tests to the more common local weeds, grasses, trees and flowers were performed on 18 of the 19 cases. The testing material* used in this series consisted of oleoresin diluted in ten parts of acetone. The open method of patch testing was employed, material being applied to an area selected on the back and allowed to dry on. The patient was advised not to wash the area until readings were made 48 hours later. In all cases, to avoid possible flare-ups, testing was performed when the eruption was in a quiescent stage or entirely clear.

All patients, whether they showed reactions to the oleoresin fraction or the protein fraction of the plant, were given the oleoresin treatment set. The treatment set consists of three bottles of the specific oleoresin diluted in corn oil, together with a number of No. 1 size gelatin capsules. The set contains 1 oz. each of the 1:100, 1:50, and 1:25 dilutions.

The patient is instructed to take an initial dose of one drop of the 1:100 dilution of the oleoresin in a gelatin capsule. The capsules are filled at the time of ingestion, and fewer reactions are noted if the capsule is taken immediately following the morning or evening meal. This dosage is taken daily for a week. During the second week two drops are ingested daily. After this period, if there are no symptoms of intolerance, the patient is advised to increase the number of daily drops as rapidly as tolerated. After the bottle of 1:100 dilution has been taken, the patient is advised to begin the 1:50 dilution, starting with half or less of the maximum number of drops he was ingesting at the time when the first bottle was finished and increasing as before. The same applies to the 1:25 concentration. Tolerance to the material varies to a considerable degree, some patients being able to stand rapid increases, using up the three bottles in as short a period as two months. With the prescribed gradual increase the initial set is intended to last eight months.

Treatment complications when they occur usually manifest themselves during the first few weeks of therapy. These consist of pruritus ani, which is the most annoying, acute exacerbations of the existing skin condition and less often urticarial eruptions. If such complications should occur, the patient is advised to stop treatment and resume the same or slightly reduced dosage of daily drops when the symptoms have disappeared. Complete avoidance of the plant suspected is stressed during this period of treatment.

RESULTS OF TREATMENT

The information obtained in this series of cases and shown in Table I is the result of a detailed and lengthy questionnaire. It must be stressed that this information has been supplied by the patient and, hence, must be considered as subjective only. It was found necessary to divide the improvement column into two, for in some cases it was not possible to deduce from the patients' answers whether there had been a definite improvement. These cases were placed in a "questionable" column. Under the heading

*The material used in testing and treatment was obtained from the Graham Laboratories, 7 Willow Lane, Dallas 6, Texas.

of "definitely improved" we considered only those who stated that during the next pollen season there was either no recurrence of the eruption or that the recurrence, if there was one, was much milder in character. Those patients who considered themselves unimproved were unequivocal in their replies.

It is our plan to conduct yearly surveys of our treated patients and to perform follow-up examinations and patch tests on those patients who have completed three years of continuous oral therapy, to assess the degree of clinical improvement. Of the nine who completed at least one full year of treatment, six have reported definite improvement. Patients who reacted to the scratch method only were generally unimproved, with the exception of one (11) who gave reactions to both types of testing, and another (2) who reacted to scratch tests only. In the former, while it would appear that the patient was protein sensitive, it may be argued that he was also oleoresin sensitive. Of the 19 cases, 14 showed reactions to the oleoresin patch tests. Eight of these showed no reactions to the scratch method. In the remainder, the reactions to the oleoresin patch tests were decidedly stronger and more numerous. In only one case, showing reactions to both methods, did the number of scratch reactions outnumber the patch reactions (Case 11). Of the 14 patients, five discontinued treatment because of flare-ups of their eruptions. Of the unimproved, three had reacted to protein scratch tests and only two to oleoresin patch tests.

Side reactions in this group were very much in keeping with those reported by other authors. These consisted of pruritus ani, flare-ups of the eruption, and gastro-intestinal upsets. It is unfortunate that five of the patients chose to discontinue treatment instead of following the instructions to discontinue taking capsules temporarily and resume on slightly reduced daily doses when symptoms had subsided.

SUMMARY

1. Nineteen cases of plant dermatitis have been treated for a period of one to two years by the use of plant oleoresin extracts. Fourteen patients continued treatment for a period of one to two years. Nine of these were oleoresin sensitive and five were protein sensitive. Of the nine oleoresin sensitive, six reported definite improvement. Of the five protein sensitive, two reported im-

TABLE I.

THE TREATMENT OF POLLEN DERMATITIS WITH OLEORESIN (ORALLY)

No.	Oleoresin patch tests	Protein scratch tests	Number of positive reactions		Duration of disease in years	Duration of treatment in years	Side reactions			Unimproved	Improvement		
			Scratch	Patch	At time of testing		Pruritus ani	Flare-up	G.I.		Questionable	Definite	
1.	x	x	1	3	2	2	x					x	
2.		x	4	0	2	2	x					x	
3.	x	x	2	0	6	1				x			
4.	x	x	0	8	2	1		x				x	
5.	x	x	0	11	2	2	x	x	x		x		
6.	x	x	0	3	8	2		x				x	
7.	x	x	6	0	3	1					x		
8.	x	x	1	5	2	1				x			Took only half initial supply.
9.	x	x	0	13	8	2	x					x	
10.	x	x	2	4	3	Stopped o	leoresin b	ecause	of flar	e-up of e	ruption (on	e month)	
11.	x	x	7	2	9	1						x	
12.	x		0	6	24	1		x			x		
13.	x	x	5	0	3	1		x	x	x			
14.	x	x	3	9	7	2						x	
15.		x	34	0	5	1				x			
16.	x	x	4	6	1	Stopped o	leoresin b	ecause	of flare	-up (two	weeks).		
17.	x	x	0	4	1	Stopped o	leoresin b	ecause	of flare	-up (thre	e months).		
18.	x	x	0	8	2	Stopped o	leoresin b	ecause	of flare	-up (thre	e months).		
19.	x	x	0	5	1	1	x			x			

provement, although one was apparently also oleoresin sensitive. Of those reporting improvement, five had been under treatment for a period of two years.

2. From the results obtained in this small series, it would appear that oral hyposensitization with oleoresin extracts in oil is of definite value in the treatment of plant dermatitis due to the oleoresin fraction.

3. The use of the oleoresin extract is not recommended in those cases in which the dermatitis is due to the protein fraction of the plant.

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EVALUATION OF NISENTIL AS AN ANALGESIC AGENT IN LABOUR

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IN 1947 Ziering and Lee[1] synthesized a new analgesic agent known as Nisentil hydrochloride. The chemical formula is *dl*-alpha-1, 3-dimethyl-4-phenyl-4-propionoxy-piperidine hydrochloride. During the last five years others have investigated Nisentil as a narcotic agent and have found it to be highly satisfactory for use in obstetrical patients during labour.[2 to 6]

This report is concerned with the pain relieving properties of Nisentil when administered to the mother prior to delivery and its effect on fetal respiration after birth. Observations were completed in one hundred consecutive patients delivered in one service at the Royal Victoria Hospital between July and October 1953. The ages of the women ranged from 16 to 43 years, the average being 26 years. There were 37 primiparæ and 63 multiparæ. The types of patients are listed in Table I.

TABLE I.

CLASSIFICATION OF PATIENTS

Type	*No of cases*
Normal	94
Double uterus	1
Inactive tuberculosis	1
Toxic dermatitis	1
Cephalo-pelvic disproportion	3
Total	100

The method of delivery and type of anæsthetic administered are recorded in Tables II and III.

TABLE II.

METHOD OF DELIVERY

Method	*No. of cases*
Spontaneous (vertex)	53
Low forceps	36
Mid forceps	8
Breech extraction	3
Total	100

TABLE III.

ANÆSTHESIA

Type		*No. of cases*
Spinal		17
Local		10
Inhalation	Nitrous oxide, trilene, O_2	70
	Cyclopropane, O_2	3
Total		100

Our series includes the delivery of 100 viable babies. All babies were of a gestation period of 36 weeks or more with one exception, this infant being 34 weeks. There were no twin births.

An initial dose of 60 mgm. of Nisentil was given subcutaneously to the first 75 patients. This same dose was repeated when additional analgesia was required. The other 25 patients received an initial dose of 40 mgm. of Nisentil in combination with scopolamine 0.4 mgm. Only the 40 mgm. of Nisentil was administered as a repeat injection to this latter group. A total of 28 repeat injections was given to 22 patients.

EFFECT ON THE MOTHER

The average duration of labour in primiparæ was 18 hours and in multiparæ 11 hours. The duration of labour was not decreased as reported

in the series of LaForge[5] and Kane.[6] The onset of action of Nisentil was very prompt, varying from two to 20 minutes, with an average of eight minutes. Maximum effect was reached in an average of 14 minutes and the duration of effect averaged one hour, 43 minutes.

When Nisentil was given in combination with scopolamine the average onset of action was increased to 12 minutes, while the maximum effect and duration of action remained the same. A more prolonged analgesic effect by using Nisentil in combination with scopolamine was not produced.

Repeat injections of Nisentil produced the same degree of analgesia as the initial injection. The analgesic effect of Nisentil on the mother was graded as follows:

Poor relief	0
Fair relief	+
Satisfactory relief	++
Excellent relief	+++

Table IV shows the analgesic effect of Nisentil (60 mgm.) alone, Nisentil (40 mgm.) with scopolamine (0.4 mgm.) and repeat doses of Nisentil (40 or 60 mgm.).

TABLE IV.

ANALGESIC EFFECT

Drug	*Analgesic effect* +++	++	+	*0*
Nisentil (60 mgm.)	33	30	11	1
Nisentil (40 mgm. with scopolamine 0.4 mgm.)	11	8	5	1
Repeat Nisentil (40-60 mgm.)	12	12	4	0
Total	56	50	20	2

In all, 128 individual doses were given; 106 produced satisfactory to excellent analgesia. Twenty doses produced fair but inadequate relief and two doses gave no relief whatsoever.

No serious side effects were noted but there were some minor reactions. Twenty-three of the 100 patients noticed slight dizziness which was transient and not troublesome. Vomiting was noted in six cases, and three additional patients complained of nausea. One patient perspired quite profusely a few minutes after the injection of the drug. The eyes showed no pupillary change in any mother and there was no effect on maternal respiration. The drug showed no significant effect on blood pressure or pulse rate except a very slight lowering of either or both in a small number of cases.

TABLE V.

EFFECT ON NEWBORN RESPIRATION
NISENTIL ALONE (60 MGM.)

Effect on respiration	*Spinal or local*	*Anæsthesia Inhalation*	*Total*
Breathed and cried spontaneously	21	36	57
Mild respiratory depression	2	7	9
Moderate respiratory depression	0	4	4
Marked respiratory depression	0	5	5

TABLE VI.

EFFECT ON NEWBORN RESPIRATION
NISENTIL (40 MGM.) AND SCOPOLAMINE (0.4 MGM.)

Effect on respiration	*Spinal or local*	*Anæsthesia Inhalation*	*Total*
Breathed and cried spontaneously	4	12	16
Mild respiratory depression	0	4	4
Moderate respiratory depression	0	3	3
Marked respiratory depression	0	2*	2*

*Includes one fetal death.

Seventy-three per cent of the babies breathed and cried spontaneously immediately after birth. Thirteen per cent showed mild respiratory depression but they breathed in less than one minute following stimulation. Fourteen per cent showed moderate to marked respiratory depression. The probability is that the depression in these cases was due to the combination of the drug with inhalation anæsthesia. This is emphasized by the observation of the 27 patients delivered under spinal or local anæsthesia. None of these babies showed moderate or marked respiratory depression.

The main effect of Nisentil was to lessen perception of pain and to produce drowsiness of the patient, the majority sleeping lightly between contractions. The patients remained co-operative and mentally clear although a few had a sensation of "floating".

EFFECT ON THE BABY

No significant changes in the rate or quality of the fetal heart were noted after injection of Nisentil. The effect of Nisentil on the baby was determined by the degree of respiratory depression. This was graded as mild, moderate or marked. In the mild cases the baby cried in less than one minute and needed minimal stimulation such as rubbing, slapping the feet or buttocks, or gentle tracheal suction. The moderate and marked cases of respiratory depression were differentiated depending upon degree. In these cases the baby required over one minute to cry and was given oxygen, tracheal suction or mechanical respiratory aid.

Tables V and VI show the effect of Nisentil on the respiration of the newborn compared to the type of anæsthesia administered. In addition, Nisentil was given to 18 patients less than one hour before the time of delivery. In every case the baby cried spontaneously.

There was one fetal death. This was a case of difficult forceps delivery in a patient who had a contracted pelvis. The autopsy examination of the baby revealed a skull fracture and a subtentorial hæmorrhage. The death was not attributed to the use of Nisentil.

CONCLUSIONS

1. Nisentil Hydrochloride produced adequate pain-relief in 83% of patients.

2. Our series showed good analgesic results with 60 mgm. of Nisentil, repeated when necessary. The drug was not as satisfactory when used in combination with scopolamine.

3. There were minor reactions of dizziness and vomiting in a small percentage of patients.

4. Respiratory depression occurred in 14% of babies. In every instance this depression occurred when the drug was used in combination with inhalation anæsthesia.

5. Nisentil is a useful drug for obstetrical analgesia on account of its short and rapid action. In the absence of inhalation anæsthesia there was no respiratory depression in the newborn babies.

NOTE: Acknowledgment is made of the Hoffmann-LaRoche grant to McGill University which made this study possible.

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THE STABILITY OF SODIUM PHENOBARBITONE IN AQUEOUS SOLUTION*

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A NUMBER of papers have appeared concerning the stability of sodium phenobarbitone in aqueous solution, particularly upon heating and in combination with other solvents, since it is frequently used for injection purposes: in addition, various pharmaceutical combinations have been discussed. However, there has been no precise work done with regard to its stability in the many prescriptions written, primarily in aqueous solution in varying concentration, and with the addition of flavouring and colouring agents.

Aqueous solutions of sodium phenobarbitone are alkaline to litmus and phenolphthalein and have a pH of about 9.3. The solutions are unstable, decompose upon standing with heat accelerating the decomposition, and when boiled precipitation occurs. The solutions may be kept at 10° C. for a few days only.[1 to 4]

A review of the literature concerning the instability and decomposition products of malonylurea derivatives has been presented by Husa and Jatul[5] in connection with a study of the stability of solutions of sodium phenobarbital. Their investigation was centred about the effects of time, temperature and concentration on solution of sodium phenobarbitone, and the effect of heat, pH and stabilizers was reported. Assay results indicated the destructive effect of heat. Hydroalcoholic solutions were more stable toward heat than aqueous solutions, and solutions containing a high proportion of propylene glycol were more stable than aqueous solutions.

Mackay and Aldred[6] investigated a number of aqueous solutions containing sodium pheno-

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barbitone with and without buffers, and reached the conclusion that an expiry date of fourteen days from the date of preparation would be a safe maximum for aqueous solutions. Precipitation is a frequent finding in aqueous solutions of sodium phenobarbitone and the decomposition products are reported to possess little or no hypnotic activity.

Many incompatibilities have been reported and the following is but a brief survey of the more important ones. Any acid or acid-reacting substance will precipitate free phenobarbitone from a solution of the sodium salt: this type of reaction negates the use of such popular vehicles as Elixir of Lactated Pepsin and Syrup of Citric Acid.[7] Syrup of Orange B.P. is compatible but the U.S.P. product contains added citric acid. Chloral hydrate in combination with sodium phenobarbitone will precipitate phenobarbitone base with the liberation of chloroform and the formation of sodium formate on standing, in line with the characteristic reaction of chloral hydrate and alkalies.[8]

Elixirs of vitamin B_1 and B complex result in the formation of phenobarbitone base with a solution of sodium phenobarbitone.[9] Precipitation may or may not occur depending on the concentration of alcohol in the preparation: if precipitation does not occur the combination is still incompatible due to the alkalinity of the sodium salt destroying thiamine activity.

Sodium phenobarbitone is compatible with sodium and potassium bromides, but ammonium bromide ionizes to give an acid reaction and the alkaline barbiturate reacts to precipitate insoluble phenobarbitone and sometimes forms a slightly coloured or amber solution with release of ammonia.[9]

Sodium phenobarbitone is incompatible with alkaloidal salts; for example, phenobarbitone base is formed with atropine sulphate, and if in excess of its solubility, precipitation occurs. However, when these two compounds are prescribed together with the customary small dose of atropine sulphate, the resultant phenobarbitone and atropine bases are well within their solubility range and the solutions for practical purposes are quite stable. The pharmacist should realize, though, that it is theoretically an incompatibility and there may be other substances prescribed simultaneously that will result in decomposition.

EXPERIMENTAL

The purpose of the following experimental work was primarily to determine the stability of sodium phenobarbitone in aqueous solutions in view of the fact that so many prescriptions are written for this barbiturate both alone and in combination with other drugs. The solutions were prepared using those vehicles and concentrations of sodium phenobarbitone most frequently encountered in the written prescription, although higher concentrations were used to ascertain the effect of concentration on stability. Temperature variations were not extreme, but were sufficient to illustrate the possibilities which might occur when such solutions are kept in the home and in the dispensary. In addition, small concentrations of propylene glycol were used in the vehicle considerations since it has been shown to give marked stability to solutions of sodium phenobarbitone for parenteral administration when used in high concentration. The solutions were assayed at intervals of one, two, three, four and eight weeks.

Assay.—A survey of the literature reveals a great number of assay methods and consideration of these led to the adoption of the Budde assay[10] as modified by Husa and Jatul.[5] The assay is of short duration, the number of reagents small, and there is no interference with colour or with the turbidity produced at the end point. The results are subject to an error of approximately 3 to 5% since the amount of silver nitrate could not be determined smaller than 0.05 ml. The assay is based on the formation of an insoluble silver phenobarbitone compound in the presence of anhydrous sodium carbonate with the addition of silver nitrate: excess silver nitrate is evidenced by the turbidity produced from the reaction of excess silver ions with sodium carbonate. The introduction of error due to the reaction of silver nitrate with the decomposition products of sodium phenobarbitone was shown to be insignificant in concentrations of the solutions employed by Husa and Jatul.

Procedure.—Fifteen ml. of the prepared solution was placed in a half ounce graduate to which was added anhydrous sodium carbonate (a quantity approximately five times the amount of sodium phenobarbitone in solution). Silver nitrate solution N/10 was added drop by drop until a distinct turbidity was produced: titration was done in a dark room and was viewed at right angles to a strong narrow beam of light from a Scopelite lamp, dropping being regulated so that the turbidity produced by each drop had disappeared before the introduction of the next (by means of a stirring rod). One ml. of N/10 silver nitrate is equivalent to 0.0245 gm. of sodium phenobarbitone.

Preliminary tests. — Control tests were performed in order to ascertain the validity and accuracy of the assay method in the presence of the vehicles to be used, and in no case was any interference encountered.

Solutions prepared.—Tests were performed using Merck & Co. Sodium Phenobarbitone

TABLE I.

CONCENTRATION OF SODIUM PHENOBARBITONE IN MG. AND VEHICLE IN ML. PER 5 ML. OF FINISHED SOLUTION

Sodium phenobarbitone	*Water*	*Syrup of orange B.P.*	*Elixir aromatic red C.F.*	*Propylene glycol*
7.5	5 ml.	0.25	0.25	0.25
		0.50	0.50	0.50
		2.50	2.50	2.50
10.0	5 ml.	0.25	0.25	0.25
		0.50	0.50	0.50
		2.50	2.50	2.50
15.0	5 ml.			
20.0	5 ml.			
30.0	5 ml.			
60.0	5 ml.	0.25	0.25	0.25
		0.50	0.50	0.50
		2.50	2.50	2.50

U.S.P. XIV. In all cases bulk solutions were prepared, diluted to the appropriate concentration and quantities of 240 ml. of each strength stored in completely filled clear glass prescription bottles which were tightly capped. The solutions were stored at 4° C., 22° C. ± 4° C., and 30° C. ± 5° C. and assayed at intervals of 1, 2, 3, 4 and 8 weeks. Table I outlines the number and types of solutions prepared. Concentrations are expressed as mgm. per 5 ml. since this approximates to the teaspoonful dose.

The following tables show the assay results. No decomposition was found at a temperature of 4° C.

TABLE II.

PERCENTAGE LOSS IN STRENGTH OF SODIUM PHENOBARBITONE IN AQUEOUS SOLUTION WITH SYRUP OF ORANGE

T	*1 week*			*2 weeks*			*3 weeks*			*4 weeks*			*8 weeks*		
	Solutions containing 7.5 mgm. in 5 ml.														
	A	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*
2	2.5+	2.5+	0	3.5+	3.5+	3.5+	7.5+	7.5+	3.5+	7.5+	7.5+	7.5+	12+	12+	10+
3	3.5+	3.5+	0	7.5+	7.5+	3.5+	7.5+	8.8+	7.5+	8.8+	12.0+	8.8+	12+	12+	12+
	Solutions containing 10 mgm. in 5 ml.														
2	1.5	1.5	0	5.8+	5.8+	2.9+	5.8+	8.8+	5.8+	11.9+	11.9+	8.8+	16.6++	16.6++	11.9+
3	5.8+	5.8+	2.9+	8.8+	8.8+	5.8+	11.9+	11.9+	8.8+	15.3+	15.3+	15.3+	16.6++	16.6++	16.6++
	Solutions containing 60 mgm. in 5 ml.														
2	2.5	2.5	0	7+	7+	3.5	11+	11+	4.5+	14+	14+	11+	20++	20++	20++
3	4.5+	4.5+	3.5+	7+	7+	7+	11+	11+	11+	20++	14++	14++	24+++	24++++	24++++

TABLE III.

PERCENTAGE LOSS IN STRENGTH OF SODIUM PHENOBARBITONE IN AQUEOUS SOLUTION WITH ELIXIR AROMATIC RED

T	*1 week*			*2 weeks*			*3 weeks*			*4 weeks*			*8 weeks*		
	Solutions containing 7.5 mgm. in 5 ml.														
	A	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*
2	2.5	2.5	0	3.5+	3.5+	2.5	3.5+	3.5+	3.5+	7.5+	7.5+	7.5+	10.5+	10.5+	10.5+
3	3.5	3.5+	2.9+	3.5	3.5+	3.5+	7.5+	7.5+	7.5+	10.5+	10.5+	10.5+	12+	12+	10.5+
	Solutions containing 10 mgm. in 5 ml.														
2	0	1.5	1.5	2.5	5.8+	2.9+	3.5+	5.8+	5.8+	7.5+	11.9+	11.9+	10.5+	16.6+	15.3+
3	2.9+	2.9+	2.9+	3.5+	5.8+	5.8+	7.5+	8.8+	8.8+	10.5+	11.9+	11.9+	10.5+	16.6+	16.6+
	Solution containing 60 mgm. in 5 ml.														
2	3.5+	3.5+	2.5	7+	7+	4.5+	1+	11+	11+	14+	14+	14+	20+++	20+++	20++
3	4+	4.5+	3.5+	7+	7+	4.5+	11+	14+	11+	14+	20 +++	20++	24 ++++	24++++	*24 ++++

TABLE IV.

PERCENTAGE LOSS IN STRENGTH OF SODIUM PHENOBARBITONE IN AQUEOUS SOLUTION WITH PROPYLENE GLYCOL

T	1 week			2 weeks			3 weeks			4 weeks			8 weeks		
Solutions containing 7.5 mgm. in 5 ml.															
	A	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*
2	0	0	2.5	2.5+	2.5+	5+	7+	5+	7+	7+	7+	10.5+	10.5+	10.5+	10.5+
3	3.5+	3.5+	3.5+	7+	7+	7+	10.5+	7+	7+	10.5+	10.5+	10.5+	14.5+	10.5+	10.5+
Solutions containing 10 mgm. in 5 ml.															
2	1.5	1.5	1.5	2.9+	2.9+	2.9+	8.8+	8.8+	8.8+	11.9+	11.9+	11.9+	16.6++	16.6++	16.6++
3	2.9+	2.9+	2.9+	5.8+	5.8+	5.8+	8.8+	8.8+	8.8+	15.3+	11.9+	11.9+	16.6+	16.6++	16.6++
Solutions containing 60 mgm. in 5 ml.															
2	3.5+	3.5+	2.5	7+	7+	3.5+	11+	11++	11+	14++	14++	14+	20++	20++	20+++
3	4.5+	4.5+	3.5+	7+	7+	7+	14+	11++	11+	20++	20++	14+	24 ++++	24+++++	20+++

T—Temperature
2—22° C ± 4° C
3—30° C ± 5° C

A—0.25 ml. of the vehicle
B—0.50 ml. of the vehicle
C—2.5 ml. of the vehicle except Propylene Glycol which was 1 ml.

The connotation '+' indicates the presence of a permanent white precipitate, the relative quantity of which is designated by the use of '++', '+++', '++++'.

*—Indicates the appearance of fungous growth.

TABLE V.

PERCENTAGE LOSS IN STRENGTH OF SODIUM PHENOBARBITONE IN AQUEOUS SOLUTION ALONE

Concentration in mgm. per 5 ml.	*T*	*1 week*	*2 weeks*	*3 weeks*	*4 weeks*	*8 weeks*
7.5	2	2.5+	3.5+	7.5+	7.5+	8.8+
	3	3.5+	7.5+	7.5+	8.8+	12.0+
10	2	1.5+	2.9+	8.8+	11.9+	16.6+
	3	2.9+	5.8+	8.8+	15.3+	16.6++
15	2	2.5+	3.8+	5.8+	11.5++	16.0++
	3	5.7+	9.6+	11.5+	15.4++	19.5++
20	2	1.5+	8.8+	11.7+	14.7++	20.5++
	3	3.8+	11.7+	14.7+	20.5++	*21.9++
30	2	2.0+	7+	9+	13+	17+
	3	6.0+	8+	11+	16+	*20++
60	2	1.5+	7+	11+	14+	20++
	3	*4.5+	*11+	*14+	*20++	*24+++

The connotation '+' indicates the presence of a white precipitate, the relative quantity of which is designated by the use of '++', '+++', and '++++'.
*—Indicates the appearance of fungous growth.
T—Temperature. 2—22° C ± 4° C 3—30° C ± 5° C

DISCUSSION

No loss of sodium phenobarbitone was found in any of the solutions stored at 4° C. except in those containing 0.06 gm. in 5 ml., and only after 8 weeks when the decomposition in all amounted to approximately 2%. There was no evidence of precipitation or mould growth.

Aqueous solutions of sodium phenobarbitone alone or with the vehicles were generally not stable at room temperature or above for more than one week, but remained stable for at least two months when refrigerated. Heat and prolonged exposure to heat caused an increase in decomposition; the decomposition increased as the concentration of sodium phenobarbitone increased and in all cases it appeared at a maximum in those solutions stored at approximately 30° C.

There appeared to be some slight enhancement of stability when the vehicle contained alcohol, for example in Syrup of Orange and Elixir Aromatic Red, and in most cases where the concentration of vehicle used was maximum, that is 50% (2.5 ml. in 5 ml.), and for one week only. In general, the concentration of propylene glycol used gave little or no enhancement of stability.

Fungous growth appeared principally in the aqueous solutions but only where the concentration of sodium phenobarbitone, the temperature or the time were at a maximum (0.06 gm. in 5 ml., approximately 30° C. and for eight weeks).

CONCLUSIONS

1. Aqueous solutions of sodium phenobarbitone should be refrigerated when not being used, or placed where there is a low temperature in order to minimize decomposition.

2. Aqueous solutions containing alcohol in the quantities normally prescribed by pædiatricians (and appearing generally in such vehicles as

Syrup of Orange and Aromatic Elixir) should also be refrigerated when not being used or placed in low temperatures in order to minimize decomposition.

3. Aqueous and alcoholic solutions should be preserved if dispensed for any length of time.

4. The physician and pharmacist should be aware of the incompatibilities which may arise when using phenobarbitone sodium in the compounded prescription.

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THE USE OF A SEGMENT OF ILEUM TO REPLACE A PORTION OF URETER

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THE PROBLEM of the traumatized ureter is one that periodically faces the surgeon and the urologist. In many of the modern surgical procedures the ureter may inadvertently, or by design, become involved as the operator attempts to treat a lesion in the retroperitoneal structures or in the pelvis.

Though the method of treatment best suited to a damaged ureter varies depending on the site and type of damage and also on the recognition, early or late, of such damage, there is a group of cases inevitably which end up with a long segment of ureter which is useless and can not be reclaimed. It is mandatory in these cases as in all cases involving renal tissue that every attempt be made to preserve the utmost of renal function. In order to do this in the past cutaneous ureterostomy or uretero-sigmoid transplantation has been resorted to with variable success. It certainly would be a better solution if the gap from good ureter to bladder could be bridged again restoring the normal urinary drainage pattern. Experimental trials with vein grafts, fascia over vitallium, and plastic tubes have not as yet proved satisfactory.

The use of a segment of small intestine for this purpose—the bridge of a long gap in ureter with anastomosis of the distal end to bladder—was said to have been done by Shoemaker in 1909. Nissen[1] in 1940 reported a case that was operated on in 1932 and described 6½ years later. The report gave no information about the postoperative condition of the patient except that he was well and that a strictured section of left ureter was replaced with a section of small intestine, 15 to 20 cm. in length. Aboulker and Miller, K. have reported similar procedures, the former for treatment of a strictured ureter and the latter for bilateral trauma to ureters after a Wertheim procedure.

No experimental work to support this operation had been reported however until July, 1952. McLean and Fais[2] then reported an experiment where 12 dogs were operated upon and various sections of ureter were replaced by a length of ileum measuring 20 cm. In some of the dogs a single ureter or section of ureter was replaced, in some bilateral ureteral anastomosis to a section of ileum was done, and in some a unilateral nephrectomy carried out after the contralateral ureter was replaced by small bowel. In all of these, the distal end of the small intestine was placed in continuity with the bladder.

In this experiment there was some trouble encountered with the procedure and two of the dogs died from stricture and obstruction at the site of the uretero-intestinal anastomosis. In all the dogs there was persistent infection of the urinary tract but this did not clinically affect the general health of the dogs though it did cause a variable degree of pyelonephritis. Estimations of the N.P.N. postoperatively in these dogs showed in most an immediate elevation which lasted six weeks or so, and then in some came back to normal values; in some the N.P.N. remained higher than normal continuously but without apparent clinical deterioration. The plasma Cl and CO_2 combining power did not appear to be affected postoperatively. It was found that one dog in this group went along

clinically and physiologically well for 18 months and carried through a normal pregnancy during this time with both ureters replaced by a segment of small intestine.

It was felt from the experiment that if stricture and obstruction at the site of the ureterointestinal anastomosis could be avoided and infection held under control, the procedure had definite value for the treatment of some damaged ureters in the human. It is notoriously difficult to avoid stricture of the ureter at the anastomotic site in the intestine in dogs due to the small ducts involved, but in humans with the use of the Nesbit end-to-side anastomosis or some such similar procedure this could be avoided completely in human uretero-intestinal anastomosis. The infections also would probably not be as severe and could be controlled more easily if the first difficulty was avoided and some of the many drugs now at our disposal were utilized.

Annis[3] reported in March, 1953, very similar results after similar experimental study in two dogs. In his report, one dog was killed after 13 months and the other after 10 months following a good clinical and physiological course; the kidneys here when examined showed essentially no pyelonephritis or hydronephrosis.

Davids and Lesnick[4] also in March, 1953, reported experimental work using nine dogs with about the same conclusions as aforementioned. They lost three dogs due to leak at the site of anastomosis, but four dogs sacrificed six weeks following the procedure were found to be satisfactory, and the remaining two left 24 months and 30 months respectively were clinically and physiologically good and with chemistry levels normal.

The writer had the opportunity in February, 1953, to see the results in three patients of ileal replacement of ureter done at the clinic of Dr. Reed Nesbit[5] in Ann Arbor, Michigan, with apparently good recovery. At time of writing, these cases and further ones have not been reported but because of their success, and the experimental work of McLean and Fais, it was decided to carry out just such a procedure on a patient who came under my care just following this visit to Ann Arbor.

CASE REPORT

F.H., age 54. This man was first seen by me on February 18, 1953. He had previously been hospitalized from December 30, 1952, to January 10, 1953, under the care of another surgeon, when his complaint had been that of a severe left ureteral colic. Investigation at that time indicated that there was a small calculus in the lower left ureter, approximately 4 to 5 cm. from the left ureteral orifice. On December 31, 1952, under anæsthetic an attempt was made to extract the stone using a Robinson basket, without success, though no apparent difficulty was encountered at the time, and the basket passed for a distance of 8 to 10 cm. Within the next few hours it became evident that the basket had perforated the ureter with subsequent urinary extravasation, and so, 24 hours after the manipulation he was taken to the operating room and through a left Gibson incision the extravesical area was drained and a T-tube was placed in the ureter in its pelvic portion. His postoperative course was good and the patient was allowed to leave hospital ten days after this emergency procedure, the T-tube still draining, with the hope that after a period of a few weeks there would be re-establishment of drainage as the ureter healed. At the time of drainage and insertion of the T-tube the pelvic portion of the left ureter was thought to be gangrenous in part and should be given time to recanalize. It was apparently not possible to be certain at the time of this procedure whether the distal end of the left ureter still contained the stone or if it was patent.

The patient remained out of hospital till his readmission in February. In the interval he was well for part of the time but then began to suffer from intermittent pain in the left lumbar area, recurrent left pyelonephritis and general malaise with loss of weight. During this interim at home the volume of the drainage from the T-tube did not lessen, indicating that there was still no drainage into the bladder from this side.

On re-admission to hospital he was in fair condition generally though showing some elevation of temperature. He showed some left loin tenderness, but had no pain. The site of the T-tube was quite clean and the tube draining well.

TABLE I.

Laboratory work: Hgb. 75%; N.P.N. 30 mgms. %; *Urinalysis:* *Bladder*	*Left ureter* (via T-tube)
Albumin—Slight	2+
Microscopic—Occ. pus cell	Few gran. casts
Occ. granular cast	30–40 pus cells
	15–20 R.B.C.'s
Culture—No growth	Hæm. Staph. Aureus
	B. Pyocyaneus

Intravenous pyelogram on February 20, showed delayed function on the left side with some hydronephrosis and dilatation of the left ureter down to the pelvic brim, but no outline of the pelvic ureter on the left. The right kidney appeared normal. At the completion of the intravenous pyelogram about 8 to 10 c.c. of Skiodan 15% was injected into the T-tube and plates taken, which likewise showed no dye in the pelvic portion of the ureter.

On February 23, a cystoscopic examination was done and a catheter passed to renal level on the right, but no catheter could be passed for more than 1 cm. up the left ureter. Indigo carmine injected intravenously at the time showed dye promptly from the right side but none appeared up to 25 minutes from the left.

It was finally decided that the greater portion of the pelvic portion of the left ureter was non-patent and an attempt should be made to reconstruct the lower end of the left ureter. While in hospital the patient suffered from general malaise, recurrent bouts of fever and the culture from the T-tube showed a *B. pyocyaneus* and a hæmolytic *Staph. aureus*. The infection was controlled quite well with Terramycin, 250 mgm. q.6 h.

He was prepared for five days on the Jones bowel routine with the intention of using a section of ileum to bridge the ureteral defect. On March 3 through left paramedian incision the operative procedure was carried out.

After the peritoneal cavity was entered the bowel was packed superiorly and through the posterior wall of the peritoneum the left ureter was isolated at the level of the fifth lumbar transverse process and freed to just below the pelvic brim where it became completely bound up in scar and so was transected approximately at the brim of the pelvis and made mobile for a distance of 3 to 4 cm. superiorly. The distal end of the ureter was brought through the posterior peritoneum and this structure closed posterior to it. The ureter was about twice normal size, but appeared in good condition and with satisfactory blood supply.

Following this procedure the lower ileum was surveyed and a section measuring 15 to 20 cm. was selected and this section removed from the continuity of the small bowel, leaving it attached to its section of mesentery. The ileum above and below this section was joined by end to end anastomosis. The upper end of the isolated segment of ileum was found to easily reach the cut end of left ureter and the distal end could be brought to bladder. The superior end of ileum was oversewn and then the left ureter implanted into the ileum just inferior to the superior end on its anterior surface using the Nesbit end-to-side anastomosis with suture of 4-0 chromic. This end of ileum was then anchored in place to the posterior peritoneum.

The distal end of the section of ileum was passed through the sigmoid mesocolon and through a small incision in the pelvic peritoneum and implanted in the posterosuperior aspect of the left side of the bladder. The ileum was anchored to the bladder by extravesical interrupted chromic 4-0 sutures around the circumference of ileo-vesical junction and held intravesically by splitting the distal end of ileum into two flaps that were anchored one on each side of the entrance of the ileum, intravesically.

A suprapubic tube was left in the bladder through an anterior opening and a No. 12 urethral catheter was left in the ileal segment to bridge the ileo-vesical junction and brought out alongside the suprapubic tube in the bladder through a midline stab wound. Routine closure of abdomen was then carried out.

Postoperatively the patient did well. His temperature never rose above 99.6° and after seven days temperature reached normal and stayed there. The catheter in the ileal segment was removed in five days and the suprapubic tube nine days postoperatively, after insertion of a Foley urethral catheter, which latter tube was left a further four days, and with removal of this, the patient voided well with no suprapubic drainage.

Intravenous pyelogram done on March 18 showed better excretion from the left kidney and lessening of the hydronephrosis. The ileal segment did not show on intravenous pyelogram, so a cystogram was done and this showed the ileal segment and slight reflux into the left kidney.

The patient left hospital on March 20.

This patient has been seen on several occasions in the past six months and has been completely well. He has been back at work as a mechanic for seven months and has put on 25 lb. He was last checked, October 22, almost eight months postoperative and has no urinary complaints except that he notices a good deal of mucus in the urine and this is evident in the specimen examined. N.P.N. was 32 mgm. %, and his culture showed no growth up to 48 hours. Intravenous pyelography done at this time showed both kidneys equally clearly and no hydronephrosis on the left.

The result here appears to be very satisfactory so far and it is hoped that it will continue to be so. The ileal transplant was the most satisfactory answer to this man's problem and was a better solution than cutaneous or one sided ureterointestinal transplant, or to nephrectomy.

It is suggested that this procedure be considered by others when faced with the problem of a badly traumatized ureter, or one involved in some otherwise excisable carcinoma, or perhaps for multiple ureteric strictures producing hydronephrosis and destruction of a sole remaining kidney.

The author wishes to extend thanks to Dr. Allan Pollock for his help in the treatment of this patient.

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CARCINOMA OF THE LUNG: ANALYSIS OF 222 CASES*

JOHN D. STENSTROM, M.D. and HUGH S. FORD, M.D., *Victoria, B.C.*

THIS STUDY consists of all the proven cases of primary lung cancer hospitalized in three Victoria institutions† in the eight-year period 1945-1952. Cases in which the diagnosis of bronchial carcinoma was suspected but not confirmed by microscopic section have been excluded from the study. The review suggested that the number of such cases was considerable. There are 222 proven cases.

The age and sex incidence conforms with those in other reported series. There are 194 males and 28 females, a ratio of seven to one. The peak incidence occurred in the sixties. The youngest patient was 22 and the oldest 83. The time intervals between commencement of symptoms and pathological diagnosis and death conform

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†St. Joseph's Hospital; Royal Jubilee Hospital; Victoria Veterans' Hospital.

with those in other series. The symptoms were variable and could have been ascribed to any pulmonary lesion or any widespread carcinoma. The tumour cells were of three general types: squamous, anaplastic, and adenocarcinoma, the first two predominating.

Thoracotomy was performed on 65 patients, but pulmonary resection was effected in only 34 cases, 15% of the series being found suitable for resection.

Eighteen patients are alive at the time of writing; four of these survivors, who have all had pulmonary resection, are apparently well two or more years after diagnosis. No patient who did not undergo resection has survived for two years. There are six one-year survivors, four of whom are apparently well. Two underwent resection and two thoracotomy and x-ray therapy. The remaining survivors are under one year from the time of diagnosis.

Comments on Diagnosis

Bronchoscopy is a very important procedure in diagnosis but is frequently negative despite the presence of a malignant lesion in the lung; this is because the bronchoscope can see only a limited area of the lung. There is a tendency, however, towards blind faith in the procedure, whose limitations must be appreciated. Cytological study of sputum and bronchial washings frequently yields positive diagnostic results.

Exploratory thoracotomy should be used when other methods are unrewarding. About one-half of the thoracotomies in this series were of the exploratory type; being performed without a previous pathological diagnosis. Cardio-angiography may be a useful procedure in determining whether or not thoracotomy should be done in a case of doubtful operability.

The Solitary Lesion

Asymptomatic radiographic shadows or "coin" lesions of the lung represent early carcinomata in about 30% of instances and should be explored forthwith. Three of the four long-term survivors in this series had lesions of this nature. It would appear that improvement in the cure rate of the disease will occur if the lesion is excised in this phase.

X-ray Therapy

As a curative measure radiotherapy is disappointing. Relief of cough, dyspnœa, hæmoptysis and pain is occasionally obtained, and not infrequently superior vena cava. obstruction is dramatically relieved. Distant bone metastases respond in about one-half of the cases. The pain caused by bone invasion through direct spread from the primary tumour is usually resistant to irradiation. It is useful to have the radiotherapist present at thoracotomy, when he may localize the tumour for purposes of subsequent irradiation.

The positive results of irradiation therapy are hard to evaluate, but it is felt that palliation is obtained in a sufficient number of cases to make it worth while, and in an occasional case life is prolonged. It must not be forgotten that long survival has rarely been obtained by x-ray therapy alone.

Despite the occasional good result the outlook is sombre and this does not appear to have been altered by the use of supervoltage therapy or the cobalt bomb. However, by the use of these latter agents, treatment time may be shortened and the patient's discomfort lessened.

It is suggested that the use of preoperative irradiation therapy be further explored. This is being done in a limited way in some centres. The results are awaited with interest.

Microscopic bronchogenic carcinoma.—Purely by chance, two cases of microscopic carcinoma of the lung have been found in examination of routine sections of the lung taken at autopsy. In neither case was there gross evidence of a tumour in the lungs or elsewhere in the body.

Case 1

Male, aged 81 years. Cause of death: Acute gangrenous appendicitis with perforation and generalized peritonitis. In the right upper lobe, one of the small bronchi was found lined by moderately dedifferentiated squamous epithelium which had invaded the surrounding submucosal layer and peribronchial area. The epithelial cells showed loss of intercellular bridges, individual cell keratinization, moderately hyperchromatic nuclei and a few mitotic figures. The features were characteristic of a medium grade bronchogenic squamous cell carcinoma.

Case 2

Male, aged 68 years. Cause of death: Fatal pulmonary embolism following partial gastrectomy for duodenal ulcer. In the left upper lobe an area was encountered, barely more than a low power field in extent, which was composed of large anaplastic, pleomorphic carcinoma cells; neither alveolar nor squamous pattern was present. The nuclei were vesicular and markedly hyperchromatic. There were several tumour giant cells. The features appeared to fulfil the criteria for a large cell or anaplastic bronchogenic carcinoma.

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SUMMARY

1. 222 proven cases of primary carcinoma of the lung have been studied over an eight-year period.

2. Thoracotomy was performed in 30% and pulmonary resection in 15% of the cases.

3. Thoracotomy is necessary to establish a pathological diagnosis. Bronchoscopy is frequently negative despite the presence of a malignant lung lesion. Cardioangiography is occasionally useful in preventing needless thoracotomy in a patient with an inoperable lesion.

4. X-ray therapy is occasionally useful in palliation but apparently rarely curative.

5. Two instances of microscopic bronchogenic carcinoma have been described.

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DISCUSSION

Dr. Norman C. Delarue, Toronto, Ont.

I think we will all agree that the problem of treatment in cancer of the lung is far from solution. Despite the fact that this disease is the commonest visceral cancer of the male sex, the wide experience gained in dealing with this problem surgically has resulted in very little improvement in the end results obtained. Dr. Stenstrom's figures for operability, resectability and survival rates are roughly those reported from other centres dealing with this problem.

When one attempts to undertake a plan of therapy designed to improve these results there are apparently three alternatives. Earlier recognition of the disease would undoubtedly increase the number of favourable cases being treated surgically and for this reason there has in certain sections of the country been a great emphasis on lay education and particularly upon the importance of group surveys in demonstrating radiologically these early cases. In some centres a radical pneumonectomy has been attempted with a direct surgical attack on ipsilateral mediastinal lymph nodes. It has been our impression that the lymph drainage of the mediastinum results immediately in involvement of both sides of the mediastinum and as a bilateral block dissection is technically not feasible, we do not think that this radical extension of the standard pneumonectomy procedure will prove of great value.

The third method of attack and the one in which we are most interested depends upon the use of x-radiation. It is readily agreed that there is no use in utilizing this method of therapy unless in cancericidal dosage and the determining factors in applying this type of therapy have, in the past, been difficulties in technical application and the inability of the patient to stand a full dose of radiation when delivered by relatively low dosage sources. In Great Britain, physicians, depressed by the poor results of surgical extirpation and impressed by the palliation obtained in some cases of non-resectable disease, have attempted curative x-ray therapy and several long-term survivals have now been reported, whereas a comparative study of untreated series fails to demonstrate such survival. Consequently there can be no doubt that this type of therapy is of definite value, and this value has been enhanced by the recent acquisition of high voltage methods of delivering the radiation which make it possible to do so within the patient's tolerance. In view of the fact that long-term survivals have now been obtained with both surgery and radiotherapy, it would seem that an attempt should be made to improve the results by combining the two methods of therapy in every case where this was technically possible.

Whether the radiotherapy should be delivered preoperatively as has been recently demonstrated by the Lahey Clinic or whether it should be delivered postoperatively would have to be decided on the basis of experience gathered after determining the end results of both methods of therapy. Certainly the time has come for some change in our approach to this problem and one would hope that a programme of this type would prove rewarding.

Dr. David P. Boyd, Boston, Mass.

There are many ways of treating statistics to make them sound more or less attractive depending upon one's purpose. I appreciate the fact that Dr. Stenstrom did not resort to any of these devices but presented things just as they are. At the Lahey Clinic we have had just under 500 cases with a clinical diagnosis of cancer of the lung, of which 420 were proven. We are particularly interested in the five-year survivals and have found that there were 159 cases seen prior to January 1, 1948. Fifteen patients lived five years or more. This represents a salvage of 9% of our total cases; 33% of all resections and 38% of those given a curative resection survived five years or longer with a total resection mortality for all the years of 8%. All of these figures are perhaps slightly better than those usually reported in the literature and perhaps the fact that many of our patients are private patients contributes to a slightly improved salvage.

In the last two or three years we have been applying supervoltage therapy to certain cases of carcinoma of the lung. The two million volt machine has been made available to us by the Massachusetts Institute of Technology. It is too early to evaluate this new therapeutic method properly, but I think it can be stated emphatically that supervoltage therapy will cause shrinkage and at times disappearance of a squamous carcinoma of the lung. However, we have had the experience of having patients come to postmortem following supervoltage therapy with cerebral and other metastases despite the fact that the chest contained no carcinoma whatever. We have also been exploring the possibilities of making inoperable cases resectable by applying supervoltage therapy before and after surgery. We have not been encouraged by our experience in this regard. Sufficient supervoltage therapy to cause disappearance of a large bronchogenic carcinoma will usually result in breakdown of the lung and the tumour and in intractable cough. The surgeon will then be forced to do a pneumonectomy under the worst technical circumstances, usually with loss of his patient.

At the present time we can only state that supervoltage therapy will cause the disappearance of some carcinomas of the lung and should be used following pneumonectomy for the more favourable types of bronchogenic carcinoma. I do not believe it will prove to be a useful agent in the more advanced type of lesion.

"Every sick person is in distress, or thinks he is (and what but thinking makes it so?), and every relative with a grain of family feeling is more or less anxious. We cannot repeat these simple axioms to ourselves too often, or impress them too deeply on those who work with us at healing."—Editorial, *Lancet*.

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THE RELATIONSHIP BETWEEN GASTRO-INTESTINAL DISTURBANCES AND PULMONARY TUBERCULOSIS

K. J. MOMOSE, M.D., *Toronto*

PULMONARY TUBERCULOSIS still ranks as the highest disabler amongst all diseases in persons between the ages of 15 and 30. In the past 10 years much has been done to discover, to prevent and to treat this disease. Unfortunately however, our teaching has been such that less and less emphasis seems to be placed on the actual history and general symptoms of this disease amongst many of the doctors who do not treat tuberculosis frequently. It appears that nowadays little is made of the fact that this disease still remains one of the great imitators of other conditions. As a consequence we are still missing some of our earlier as well as relapsed cases.

Although great strides have taken place in discovering tuberculosis by mass chest x-ray surveys of special groups, this approach has tended to make case finding mechanical. Our centre, like others, is still not getting all early cases this way. There are still many cases first discovered by general practitioners. Although as many as 25% come from this group, our admission histories suggest that many are still missed. It is not infrequent to hear our patients state that they sought advice from various doctors about certain complaints from a few months to five or more years before they were shown to have full blown clinical tuberculosis with radiological changes in their chests. Amongst these earlier complaints we were impressed with the frequency of gastric disturbances. Even amongst those patients who claimed to have been asymptomatic before their disease was discovered were some who admitted to some gastro-intestinal symptoms when questioned more closely.

Although gastric upset in this disease is well known to many clinicians, it is not too often stressed. In several standard books on medicine and tuberculosis reviewed, it was barely mentioned or else completely ignored. This paper was written to re-emphasize its correlation with tuberculosis in many cases, in order that we may get our cases earlier and also be able to advise the so-called arrested case.

TECHNIQUE OF STUDY

Most of our data were taken from our routine functional inquiry in the admission history. In addition personal interviews were made with set questions. We found the latter procedure necessary since there were various types of people who had positive gastro-intestinal symptoms but did not give this information readily. Those patients answering our questions affirmatively could be classified into three different types: those who readily recalled these symptoms; those who tended to forget easily and had to recollect, thus requiring a longer interview, and finally those who defensively tended to minimize their disease and denied any symptoms until an earlier history with recorded gastro-intestinal complaints or a barium series of which we had a record was pointed out to them.

We were able to study and interview a total of 392 cases out of which 128 or 33% had some symptoms pertaining to the gastro-intestinal tract. Roughly speaking, the commonest symptoms described were grouped into three main types of syndrome, namely, the nervous stomach syndrome, the ulcer-like syndrome, and the syndrome resembling intestinal influenza.

1. *The nervous stomach syndrome.*—This was also described as an irritable or weak stomach by the patients. The commonest terms used to describe symptoms were: heartburn, hyperacidity, flatulence, a knot-like sensation, and a heavy feeling or lump in the stomach. Persons who had not paid much attention to their digestion previously began to notice attacks of nausea, anorexia, and indigestion. Some had to be careful what they ate and began to have anorexia with certain types of food, especially fatty types, at different times of day. Some had a poor appetite in the morning and ate well towards the evening whereas others found that breakfast was their best meal. These symptoms varied in frequency and intensity. In some they were frequent and severe enough for a doctor to be sought, in others various drugstore tonics were tried at different intervals, and in others the attacks were so infrequent and short that they were usually forgotten until certain episodes reminded the patient of them. This syndrome was the commonest of the three types (see tables later). Five cases are given below as typical examples:

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CASE 1

S.I., a 21 year old male, was followed up by the Montreal Division's chest clinic since both of his sisters were being treated at our sanatorium for tuberculosis. Although his chest radiographs showed a doubtful shadow at the right apex, it was read as an old scar. He was followed up at various intervals for three years without any radiographic changes, although he had frequent stomach upsets throughout this period and especially in the year just before his admission. He worked hard until he suddenly developed a massive infiltration of the right upper lobe which developed into a cavity, with hæmorrhage. On admission to our hospital, he required a therapeutic pneumoperitoneum to stop this hæmorrhage. After a few months' rest his digestion returned to normal.

CASE 2

W.C., a 38 year old foreman bluntly stated that he had had to see about ten different doctors regarding his temperamental stomach in a period of a year until a routine chest radiograph showed a moderately advanced tuberculosis with a definite cavity at the left apex. His stomach trouble also subsided when he began to improve at the hospital. His main symptoms were hyperacidity, anorexia, occasional nausea, and gas pains with increasing nervousness.

CASE 3

H.M., a 25 year old nurse who was receiving annual chest radiographs had had nervous indigestion for the past six months with occasional spells of diarrhœa. She did not pay much attention to these symptoms until one day she brought up a mouthful of bright red blood while working. A chest x-ray taken at this time showed a partial atelectasis of the upper lobe with a cavity measuring 2 cm. in diameter. Reference back to her three previous chest radiographs which had been regarded as normal revealed a few abnormal linear markings in the first interspace on the right side. These abnormalities were not called to her attention until she overworked and the disease progressed.

CASE 4

K.W., a 35 year old bank clerk was admitted as a relapse case. His first admission was ten years ago for minimal bilateral apical tuberculosis. At this time the patient stated that he had had slight indigestion for a few months prior to his admission. He was placed on the ordinary regimen and was discharged a year and a half later as an arrested case. He did perfectly well until two years ago when he had to work harder. From this time on, he noticed easy fatiguability as well as indigestion. He began to have attacks of dyspepsia, diarrhœa, and occasional vomiting spells, which increased in frequency within the past year. His last annual chest radiograph showed a far advanced tuberculosis with cavities and some softening of former nodular shadows.

2. *The ulcer-like syndrome.*—In addition to the symptoms mentioned under the first group, persons in this group had upper abdominal pain especially in relation to food. The pains were described as gnawing, burning and cramp-like. So many of these symptoms mimicked those of gastric or duodenal ulcer that several of our patients were placed on medical regimens for ulcer for several months. Others at various intervals were referred to clinics for barium series and enemas. Here abnormal lung shadows were found when a routine chest film was taken or fluoroscopy of the chest was undertaken. When some of the minimal and apparently chronic shadows were found, the activity of these lesions was not properly assessed or explained and the patients were lost for another several months. The findings in barium studies were usually described as within normal limits and a clinical diagnosis of nervous indigestion was made. Only an occasional duodenal or gastric ulcer was found (3%) from our study. Due to the persistence of some of these gastro-intestinal symptoms, a few patients had two or more barium studies of their gastro-intestinal tract. In our series there were two patients who developed pulmonary tuberculosis after gastrectomy. In these cases, it was difficult to tell whether part of the gastric upset before and after the operation was due to pulmonary tuberculosis or not. In addition to these, there were about 14 patients who had one or more barium series at our sanatorium for a suspected peptic ulcer or tuberculosis of the intestine while their pulmonary tuberculosis was being cured. However, neither of these lesions was demonstrated and certainly most of these patients could be classified as having an ulcer-like syndrome due to pulmonary tuberculosis.

The following case is an example of a patient having this syndrome before his tuberculosis was found:

Mr. J.B., a 19 year old student had been having burning as well as sharp pains about his epigastrium after eating for a year before admission. Although these symptoms were not constant, they gradually increased in intensity and occurred more frequently and he finally called a doctor. A diagnosis of peptic ulcer was made and he was put on an ulcer regimen for several months. However as he did not improve to any extent a barium study was arranged at a nearby hospital. This showed a normal gastro-intestinal system but a chest x-ray showed a cavity in the left apex. After his admission to the hospital and after several weeks of streptomycin-PAS therapy these ulcer-like symptoms improved.

3. *Syndrome resembling intestinal influenza.*—There were some who developed an acute gastro-intestinal syndrome with headache, nausea, vomiting, diarrhœa, colicky abdominal pain, and general malaise. On investigation, some had a transitory fever with temperature between 99 and 100° F. in the evening. The white cell count was within normal limits. Some developed propulsive diarrhœa, with as many as 10 stools a day with or without colicky pain throughout the abdomen. There was no definite localized tenderness although some admitted to vague pains in any of the four quadrants, which made it more difficult to differentiate this from the more common acute abdominal conditions. When doctors were called, some investigated further

with barium series, etc., but usually did not prolong the investigation because of the transient nature of this condition; others just observed the cases and gave supportive measures. Patients were usually told afterwards that they had had gastric or intestinal influenza. This syndrome usually lasted acutely for about one or two days and then gradually subsided. Most of these patients had a so-called sensitive stomach after that until their tuberculosis came under control.

Two typical examples of the above syndrome were:

CASE 1

M.C., a 44 year old woman newspaper reporter had undergone a cure in 1938 for a unilateral condition. Her chest x-rays showed stability until her present breakdown. Although she was having vague gastric upsets from about 1948, she more or less ignored them until an acute exacerbation of the above syndrome developed in the fall of 1950. She immediately called a doctor who told her that she had intestinal flu and treated her with supportive measures. After a few days she began to feel better although her stomach seemed to be more easily upset from that time on. At this time she began to worry about her tuberculosis and enquired about it after a routine physical examination, but she was told that there was nothing to worry about. She states that she used to have milder forms of the above syndrome for over two years, gradually losing more and more weight and becoming weaker and weaker. By this time there were x-ray changes in both lungs. Her right lung which was reported as clear was now badly involved and she was admitted to our hospital as a far advanced incurable case. Only after three to four months of Rimifon (isoniazid) therapy along with streptomycin did she get complete relief of her temperamental stomach. She realizes now on looking back that her gastric upsets were definitely related to the activity of her pulmonary tuberculosis. She realizes that, if her family doctor had also recognized this relationship sooner, he could have advised her much sooner about resting and she would probably not be in her present unhappy state.

J.C., a 28 year old labourer stated that he had been bothered off and on with left sided colicky pains for the past five years with occasional propulsive diarrhœa in the mornings which usually improved in the evening. He saw several doctors about these symptoms but nothing was ever found and he was usually treated symptomatically. Last October, the patient had a bad attack of the above syndrome and he was admitted to a general hospital for a general investigation. On a routine chest plate they found a so-called scar in his left upper lobe. This same lesion was pointed out to him when he tried to get into the army during the war, but he was told that it was only a scar. A gastric washing was done as part of his investigation; acid-fast bacilli were found and he was immediately transferred to the sanatorium.

The total number of cases interviewed and studied was 392. There were 174 women and 218 men; 52 women (30%) and 76 men (35%) had gastro-intestinal symptoms.

Thirty-six patients or approximately 9% of our group have had barium studies at least once or twice. Thirteen patients (3%) had at some time or another good radiological or surgical evidence of past or present peptic ulcer.

TABLE I.

DURATION AND TYPES OF SYMPTOMS

Types	*Greater than one year*	*Approx. one year*	*6 months or less*	*Total*
Duration in male				
Nervous stomach....	30	13	10	53
Ulcer-like....	9	2	—	11
Resembling intestinal influenza...	5	6	1	12
Duration in female				
Nervous stomach....	12	9	10	34
Ulcer-like....	4	1	—	5
Resembling intestinal influenza...	6	4	3	13

DISCUSSION

Gastric upset in tuberculosis was mentioned quite frequently in the early days. In the 18th and 19th centuries this condition was termed gastric fever as related to phthisis. The earlier workers of this century like Fishberg, Pottenger, and others used to mention in their writings that gastric upsets occurred not only in far advanced but also in incipient cases. Undoubtedly many of these symptoms mentioned by the earlier clinicians were due to actual tuberculosis of the intestine, since several workers have shown that as many as 50 to 80% of their autopsy cases of far advanced pulmonary tuberculosis had secondary involvement of the intestine.

Amongst some of the recent workers in gastroenterology, Fisher has noticed gastro-intestinal symptoms in 14%, Hecht in 16%, Cullen in 29%, and Hardt and Cohen in 20% of their cases of pulmonary tuberculosis. Just what mechanism causes these symptoms just before a new pulmonary tuberculous lesion appears, or before an old lesion breaks down, in some cases is still not definitely proven. Various people have tried to explain this mechanism in different ways, but most of the blame is placed on the toxin of this disease. For instance, Pottenger believes that these symptoms are due to reflex reaction from toxin acting on the autonomic innervation of the digestive tract; Fishberg believes that the toxin produces atony of striated and smooth muscle; Gauss and others believe that these symptoms are just toxic manifestations in the digestive tract. Hecht believes in addition that these symptoms are due to toxæmia, an expression of labile or poor immunological

resistance. Kantor attributes these symptoms to toxæmia and malnutrition. Curschman believes that the so-called early functional dyspepsia develops into a true gastritis in time.

In our series there are undoubtedly some patients who had gastric malfunction for psychological reasons. The gastro-intestinal tract, being an organ language medium, can certainly become vocal in the form of diarrhœa, vomiting, or dyspepsia in the presence of stress. In addition, however, there is evidence that organic factors play a part in some of these cases. Browne and McHardy showed by gastroscopy in 50 severely ill patients that there was atrophic gastritis in 24%, superficial gastritis in 22% and ulcerative disease of the mucosa in 16%. Hardt, Weissman and Coulter gastroscoped 250 patients with far advanced disease and found atrophic changes in 53%. Flexner and Baum subjected only 27 patients to gastroscopy and found atrophic gastritis in a large proportion of them, but were unable to correlate the abnormalities of the gastric mucosa with the duration, severity, or type of tuberculosis. There is no reason why these changes could not have caused indigestion in some of our cases. In addition, we can assume that some of these patients may have gastro-intestinal upsets even during the early involvement of Peyer's patches if up to 80% of autopsy cases showed intestinal tuberculosis. As our present x-ray technique for the small and large bowel cannot demonstrate these early lesions there is no reason why we cannot make this assumption, especially in some of the far advanced cases.*

Whatever the mechanism, as results show, we can still diagnose our minimal and relapse cases earlier by paying closer attention to gastro-intestinal symptoms. The evidence of chest radiographs alone is not accurate enough in many cases, as it does not always reveal the activity of the disease. Until we can devise additional methods of finding and assessing pulmonary tuberculosis, we should pay particular attention to the different symptoms in the following four groups of people: (1) Those who have a doubtful shadow in their lungs but have never been treated. (2) Those who have been treated for tuberculosis and have a so-called stable abnormal shadow. (3) The household contact cases. (4) The increasing number of postoperative cases. If there are any gastric upsets in these groups of persons we should observe and study them more closely than if they occurred in the rest of the population. If the gastric washings are free from tubercle bacilli and if the chest radiographs are still stable, we should at least advise them to rest more and to lead a more regular life. Perhaps by this approach we can prevent further breakdowns or find cases earlier, for who knows the exact line between activity and inactivity in many tuberculosis cases at present.

It is realized that gastric upsets may be a symptomatic response to many other organic and functional diseases. It may be stated that, in general, it is a rather difficult thing to track down one disease with one group of symptoms. However by remembering the frequency of its occurrence in tuberculosis and by paying special attention to the three groups of persons mentioned above, we can perhaps practise better clinical medicine in this field.

*Some of these gastro-intestinal symptoms may be explained on a purely neuro-anatomical and physiological basis. Such nerves as the vagus, phrenic, splanchnics, and some of the lower intercostals either supply the respiratory tract as well as part of the gastro-intestinal tract or else pass through the respiratory tract region to reach the abdomen and its organs. One can then conceive of a direct or indirect stimulation of these nerves resulting from an inflammatory process in the lung and its regional lymph nodes and giving rise to some of these symptoms.

SUMMARY

1. The frequency of gastro-intestinal upset as a sign of active pulmonary tuberculosis has been shown.

2. The types of symptoms most commonly encountered are grouped under the nervous stomach syndrome, ulcer-like syndrome, and the syndrome resembling intestinal influenza.

3. The explanation for the mechanism of these symptoms in some cases is briefly discussed.

4. By paying close attention to symptoms such as those of gastric upset in certain groups of people who are most likely to develop active tuberculosis, it is hoped that minimal and relapse cases may be recognized earlier.

The writer is indebted to Dr. F. L. Phelps, superintendent, and Dr. M. A. Hickey, assistant superintendent, of the Royal Edward Laurentian Hospital in St. Agathe for the opportunity to make these observations and this report.

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USE OF THE VITAMINS

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THIS IS A CRITIQUE of the most expensive placebo in current use, the vitamin tablet. While I would in no way attempt to derogate the therapeutic value of vitamins where definite indication exists for their use, I believe most firmly that an indication is present in less than one out of a hundred cases in which vitamins are prescribed.

We need to evaluate most carefully the known indications for the prescription of vitamins and the contraindications for their use. Also, we need to tell our patients quite frankly that the vitamins have been oversold by tremendous advertising campaigns. No known vitamin or combination of vitamins is an accepted treatment for psychoneurosis and yet, each year, countless thousands of prescriptions are written ordering expensive and extensive vitamin therapy for psychoneurotics. It is a known fact that an adequate diet is the best source of these essential compounds but few physicians take time to discuss this aspect of the problem with their patients.

In many of the miraculous cures attributed to therapy with these drugs no evaluation has been made of possible psychic factors. Just because a vitamin-deficient rat is subject to infection, it does not follow that a man subject to recurrent infection must be deficient in vitamins. I have been as guilty as the rest of us in using the drugs for a "stop gap". Some preparations are ideally suited to give while waiting for the patient to recover by himself. This may be an "amiable weakness" but it is bad when the physician himself begins to believe that the therapy and not nature did the trick.

Consider for a moment the subclinical vitamin deficiency. Unquestionably it exists occasionally. We have no cheap and readily available test to determine the amount of *effective* vitamin in human tissue and no accurate standard to go by if the test were available. By its very name one supposes that the "subclinical" deficiency cannot be diagnosed by history and physical examination. Then just exactly what is it and how does one diagnose it? In spite of the reams that have been written I have yet to hear or read an account of the subclinical deficiency that does not get a bit hazy about exact diagnosis.

This is not meant to imply that the subclinical deficiency does not exist. A moment's reflection will convince anyone that, among the American people, there are all levels of vitamin intake and utilization. An accurate and meticulous dietary history will give one the basis for a shrewd guess but so many extraneous factors enter in that little more than a guess is possible.

Such things as the interaction between the vitamins and the essential amino acids, which has been clearly demonstrated, and the effect of one vitamin upon the other as well as upon inorganic materials, enter into the total picture. In the present state of our knowledge only a few time-proven facts are available and we face a great mass of data which only serves to point out how little we know about these compounds. The following summaries are designed as a working basis for clinical use of the vitamins:

VITAMIN A

In private practice a true vitamin A deficiency is a medical rarity. Most healthy people with even a remotely satisfactory diet have an adequate intake. The vitamin is oil-soluble and therefore somewhat dependent on adequate intestinal metabolism of fat for proper absorption.

Diagnosis of deficiency.—If two points are kept clearly in mind no difficulty will present. There are only two proven effects of deficiency: (1) Normal epithelial cells atrophy and are replaced by keratinizing cells. This is a slow process which may begin anywhere. (2) There is an unknown interference with the retinal visual mechanism which results in night blindness.

It is important to recognize that night blindness is not a specific symptom of avitaminosis A. The occurrence of this symptom should be an indication for a careful dietary history and examination for other factors which contribute to deficiency. Remember well that the usual complaint of temporary blindness after passing an oncoming car while driving at night is due a thousand times more often to poor eye habits in driving than to deficiency. Show your patient how to watch the *right edge of the road*, not the lights of the oncoming car. Don't give him vitamins. Bad driving habits will kill him just as quickly whether or not he has a liver full of carotene. Remember, too, that as people get older their eyes tend to be less efficient. Trying to treat the normal decline of age with vitamins is interesting, expensive, useless, and done too

often. In deficiency, night blindness does not seem to occur until liver stores of the vitamin are exhausted.

The process of keratinization of epithelium most commonly shows itself in three places: (1) Around the openings of the sweat and sebaceous glands, usually on exposed surfaces of the skin. This follicular hyperkeratosis is by no means an infallible or an early sign but its occurrence should make one suspicious. (2) The respiratory mucous membranes are affected, the usual sign being recurrent infections, frequently of increasing severity. Perhaps one out of each five to ten thousand people who have recurrent respiratory infections has avitaminosis A. (3) Classical eye signs. These are of very late occurrence and are a part of the keratinization process. The first sign is usually injection of the bulbar conjunctiva with later development of Bitot's spots. These are yellowish, wrinkled areas of hyperkeratinization ranging from the size of a pinhead to the size of the cross-section of a cigarette. The process later extends to the cornea. Such far advanced disease is almost unbelievably rare in private practice.

Causes of deficiency.—Inadequate intake is very rarely a cause of difficulty. In the presence of diseases affecting the liver and the intestinal metabolism of fat (obstructive jaundice, cirrhosis, diabetes, pancreatitis), one should think of the possibility of deficiency. It is *not* a likely possibility but it can occur. One of the common causes which we see is found in the inveterate taker of mineral oil. The vitamin dissolves in the oil and is excreted. This is worth remembering.

Subclinical deficiency.—Minor degrees of night blindness have long been attributed to subclinical avitaminosis A. In view of the statements made by some authorities that visual changes do not occur until all supplies of the vitamin have been exhausted, one might question this. I know of no way to substantiate this diagnosis. Therapeutic results are certainly unreliable, for too many other factors enter in. I would suggest that we be chary about subclinical deficiency of vitamin A until more realistic evidence is available.

Treatment.—In most suspected cases instruction as to diet is entirely ample for treatment. When the disease is clearcut and severe, a regimen of 20,000 to 50,000 units of the vitamin daily should be instituted. This may be reduced to 5,000 to 10,000 units daily after one week. In cases where deficient fat absorption seems to be at the root of the difficulty, a special water-soluble form of the compound is available.

Other uses.—The vitamin has been recommended in urinary lithiasis, for prevention of dental caries, in various arthropathies, for treatment of all types of hyperkeratosis, and as an anti-infective agent. There is no good evidence that it has any worth except in the presence of deficiency.

Other points to remember.—There is universal agreement that the use of vitamin A in conjunction with vitamin D is of prophylactic value in children. Like all other good things, it can be grossly overdone. Administration of moderate doses of a reliable preparation such as oleum percomorpheum from birth until two years of age has some advantage. Premature infants have very low reserves of the vitamin and, in addition, metabolize fats very poorly. Administration of a water-soluble vitamin A compound is valuable and should be routine.

THIAMINE

This is the most abused vitamin of all. In the past two decades some form of it has been recommended as good treatment for nearly half the diseases known to man. If we are to believe the literature that appears on our desks each morning the practice of medicine is doomed. Antibiotics and thiamine will cure everything.

The vitamin is of major importance in nutrition, playing an important role in the metabolism of carbohydrate. It is true that modern preparation of foodstuff results in removal of much of the vitamin B_1 naturally present. Until a few years ago there may have been an inadequate supply in the diets of many people. Now, with most thiamine-deficient foods artificially enriched, such inadequate supply must be nearly non-existent except in the very lowest economic groups.

True clinical deficiency of the vitamin is a medical curiosity in the United States. Beri-beri is nearly non-existent except in the presence of poor absorption. Some synthesis (by bacteria) unquestionably occurs in the normal digestive tract, and this may account for the rarity of fully-developed cases.

Signs of deficiency.—The two classical forms of this disease simply seem to be thiamine deficiency without severe protein depletion (dry beri-beri) and thiamine deficiency associated with insufficient intake of protein, and œdema

from the consequent lowering of plasma protein (wet beri-beri). Much confusion can be avoided by keeping this fact in mind in considering an actual case.

The principal signs and symptoms in the dry form are those of severe degeneration of the peripheral nerves. Seldom are the cranial nerves affected. There is, at first, severe peripheral pain with tenderness along the course of the nerves. This progresses steadily to complete loss of function with paralysis. Wrist-drop and foot-drop frequently occur in far advanced cases and there is, of course, loss of reflexes and muscular atrophy. Instead of memorizing symptoms, simply remember that the whole picture can be explained on the basis of progressive degeneration of peripheral nerves.

There are the usual signs of illness which are listed in all texts in describing nearly every disease. The patient doesn't feel well, he doesn't want to eat, he is frequently restless and may become irritable. To simplify: he's sick. It does not follow that all people who are sick have thiamine deficiency.

The wet form, which is probably not a pure thiamine deficiency so much as a deficiency in plasma protein seen often in conjunction with avitaminosis, is characterized by right heart failure and generalized œdema. Since the œdema is due in large measure to protein depletion it involves the face and arms. This is seldom seen in right heart failure alone. When it occurs in acute form, this disease is a medical emergency. Look for the œdema of protein depletion superimposed upon right heart failure, each with entirely typical signs.

Causes of deficiency.—To repeat, a thiamine deficiency of sufficient intensity to cause clinical beri-beri is a medical rarity in general practice. The average person *has* a sufficient intake of thiamine. There are exceptions among the lower income groups and the elderly, but these are not so common as we have been led to believe. In certain diseases where intake is limited or where the function of the gastro-intestinal tract is inhibited, the threat of thiamine deficiency is very real. A moment's thought will serve to list a number of such illnesses.

Subclinical deficiency.—Here is the battleground. Everything from calcaneal spurs to allergy to groundhogs has been blamed on the subclinical thiamine deficiency. Many of the pronouncements in this field have been based on studies of volunteers who were placed on thiamine-deficient diets. In a very few weeks a statistically significant number of these men developed anorexia, fatigue, irritability, and other signs and symptoms that have always been regarded as typical of psychoneurosis. Whether this is significant or whether the diet was so bad that it gave the subjects a psychoneurosis has not been determined. Actually, the studies were significant but many physicians have fallen into the error of thinking that thiamine deficiency is the cause of all such symptoms. Probably only a very few of the similar cases we see are, in reality, vitamin deficiencies.

If the patient's dietary history indicates the possibility of subclinical deficiency, thiamine is probably worth a therapeutic trial. Many times the effect is purely psychotherapeutic and the long-term effect is to make the patient sure he has some terrible organic disease. If I had to restrict this article to one sentence (not a bad thought), this is the one I would pick: *don't treat psychoneuroses with thiamine — it won't work.*

There are two ways to get a reasonably accurate diagnosis of subclinical deficiency; the meticulous dietary history, and the chemical test for the excretion of thiamine in urine. In the presence of extremely low thiamine excretion we are probably justified in administering three to five mgm. daily for a short while. If any results at all are to be obtained they will be sudden and dramatic. The subclinical deficiency of thiamine, while it unquestionably exists, has been grossly oversold, like all other aspects of the vitamins. It is not a very tenable diagnosis without some positive evidence such as a carefully taken dietary history.

Just a few words about the use of thiamine in the treatment of anorexia. It is a clinically proven fact that the vitamin will stimulate appetite, albeit somewhat capriciously. It is *not* indicated for anorexia in children until the common psychological factors usually at the root of this trouble have been recognized and corrected.

Treatment of deficiency.—Administration of high dosage of the vitamin B complex is specific for the dry form of beri-beri. In the wet form the addition of a high protein diet or one of the hydrolysed protein preparations usually results in prompt recovery. In spite of millions of written words, there is no proven and entirely acceptable

use other than to obtain specific cure of deficiency.

Simple dietary advice, where the finances of the patient permit, will be all that is needed to correct suspected deficiency. The prophylactic use of thiamine is not warranted in the average case. While mother's milk is not replete with the compound, an adequate diet for the nursing mother is a better solution than adding thiamine. This is a valuable compound and an asset to the physician's armamentarium. It is perhaps the most abused drug in common usage.

RIBOFLAVIN

In recent years deficiency of this vitamin has become increasingly rare as a solitary occurrence. It occurs with relative frequency in the presence of general nutritional inadequacy and is easily diagnosed. The vitamin is plentiful in many foodstuffs.

Signs of deficiency.—Cheilosis (or the older *perlêche*) is the best known sign. This begins as an increasing paleness at the corners of the mouth. The skin and mucous membranes become increasingly thin and ultimately fissure. These fissures extend irregularly from the corner of the mouth like spokes of a half wheel and may be crusted over with a dirty yellow crust. The tongue has a purplish colour and may be fissured, with the expected burning and aberrations of taste. The eyes show injection of the bulbar conjunctiva and ultimately of the cornea. Photophobia and profuse lacrimation are usual.

Causes of deficiency.—Inadequate intake is the only proven cause of deficiency. There has been, fortunately, little speculation about subclinical deficiency of riboflavin.

Treatment of deficiency.—Five to 10 mgm. of riboflavin daily.

NIACIN

This is the pellagra-preventive factor of older writers. The vitamin is interesting because of the fact that pellagra will respond on treatment or may be prevented by other compounds. For example, milk and eggs contain little niacin, but are good preventives of the disease. There is a recognizable subclinical deficiency state, though this diagnosis is not subject to absolute proof. Deficiency is very common in the southern states but is gradually becoming less so as nutrition improves.

Signs of deficiency.—The classic triad is dermatitis, diarrhœa, and dementia. The only trouble is that (a) dermatitis may not occur unless there is exposure to sunlight, (b) diarrhœa is seldom present except in far advanced cases, and, (c) the patients we see in private practice now are seldom demented. May I interject an important thought? Deficiency diseases are not static things but change constantly as the nutrition of the general populace changes. Many of the descriptions of deficiencies available were written 30 years ago to picture the serious and deadly deficiencies common in low income groups. As nutrition has improved these major deficiencies have become increasingly rare. We now see pellagra very seldom and then usually in a minor form which will be described here. Severe cases are somewhat rare and seen almost exclusively in the lower income groups.

Gastrointestinal symptoms usually appear first. The tongue gets sore and appears red and swollen at the tip and along the lateral margins. A diffuse stomatitis may occur, usually with secondary infection by Vincent organisms. Patients frequently complain of a burning sensation of the tongue, and a similar sensation in the epigastrium is common. In most cases the bowels move normally.

The dermatitis of pellagra is easily diagnosed. It usually is seen on exposed surfaces, beginning after the patient has been out in the sun. It starts as an erythema, is bilaterally symmetrical and looks identical with sunburn. It is sharply demarcated from surrounding normal tissue and may be suspect because this demarcation does not follow exact areas of exposure. As the disease continues, the affected area turns a dirty reddish-brown and desquamation causes formation of gray scales. In severe cases vesicles and bullæ may form.

Nervous symptoms usually seen in practice are periodic depressions and "fear states" which are more intense than those seen in the average psychoneurosis. Mild confusion is common but delirium and severe dementia are quite rare. Headaches, dizziness, and muscular weakness are common. There is absolutely nothing distinctive about the mental symptoms in niacin deficiency. Diagnosis is made on the basis of dietary history in the presence of the signs and symptoms noted above. Today, pellagra is most often a disease of poverty and is seldom seen except in the presence of this factor.

Causes of deficiency. — Inadequate intake. While inadequate absorption of niacin or allied

products has been postulated, it has never been proved.

Subclinical deficiency.—While it is not subject to scientific proof at present, clinical practice confirms the fact that some indefinite pre-pellagra symptoms do exist. Loss of strength, particularly in the legs, aberrations in appetite, and paræsthesias probably constitute the principal symptoms. It is possible but not proven that minor mental deviations may be premonitory of the full-blown clinical deficiency. When these symptoms occur, a careful dietary history is very much in order. It is certainly not wise to make such a diagnosis unless there is a clearcut history of inadequate intake.

Treatment of deficiency.—There is much evidence that clinical pellagra is usually seen when a general deficiency exists along with the specific deficiency of niacin. One of the standard multi-vitamin preparations should be given until cessation of symptoms. An adequate diet is certainly a necessity and should receive major attention. In minor or subclinical deficiencies, adequate diet is all that is necessary.

Nicotinic acid in fairly high dosage will produce a vasodilatation which lasts several hours. It is occasionally used for this purpose in cases of cerebral vascular spasm. Relative lack of toxicity is the only advantage it offers.

Points to remember.—Pellagra is found usually in the presence of multiple deficiencies. It should be treated with multiple vitamins. As with the other vitamins, many symptoms thought to be quite typical of subclinical deficiency are, in actuality, symptoms of psychoneurosis. Multi-vitamins are an expensive placebo.

ASCORBIC ACID

In the absence of this vitamin, tissues from the mesenchyme are unable to produce intercellular substance. In simple language, the glue that holds these cells together isn't made without ascorbic acid. Literally this is a disease where you fall apart. Formation of dentine (which helps hold the teeth in place) is impaired, the matrix of the bone is inadequate, there is little production of collagen by the fibrous tissues, and the vascular endothelium tends to come apart with resultant small-vessel hæmorrhage. The deficiency is clear cut and has been known for years. In the United States it is rare in adults but is still seen with some frequency in babies. For that reason, this discussion will be confined to the infantile form of the disease.

Signs of deficiency.—The disease is seldom seen before the age of eight months and equally seldom after four or five years. Children who are breast-fed and whose mothers take an adequate diet practically never have scurvy. It is usually seen in the child who has been fed cow's milk, which is a very poor source of the vitamin.

A frequent complaint is that the child seems irritable and cries whenever he is handled. This is simply a matter of soreness in the extremities and the child is objecting vociferously to movement. When you suspect scurvy, wait until the baby is resting and then grasp his legs firmly just above the knees. The normal infant may object but the scorbutic child will cry out with pain. By being very gentle you may be able to feel the subperiosteal hæmorrhages which are most common on the femur just above the knee. As the disease continues the child will tend to immobilize himself and will ultimately assume the "frog" position. When on his back, he will spread his legs and flex them at the knee so that no part of the leg and foot is not supported by the bed.

Changes in the gums are seldom pronounced until several teeth have erupted. They are usually of a deep purple colour and feel boggy and œdematous to the touch. Foul-smelling fluid faintly tinged with blood will be exuded upon pressure. The swelling may be sufficient to cover the teeth.

Hæmorrhage is the most dramatic symptom of scurvy. Since the vascular system is involved *in toto*, the hæmorrhage may appear anywhere—largely conditioned by trauma. Gastro-intestinal bleeding is not rare; neither is hæmaturia or purpuric spots. By far the most serious is intracranial hæmorrhage which may pose an immediate threat to life. Subdural hæmatomas occur with moderate frequency and scurvy should be considered when the diagnosis is made in a two to four year old without history of trauma.

Typical x-ray changes are seen frequently. The most common and easily seen of the early changes is the white line at the junction of the shaft and epiphysis of the long bones near the knee. This is simply a deposition of calcium which has not been utilized at this growing area of the bone. The epiphyseal ossification centres also show a surrounding ring of heavy calcium deposition, giving them a typical appearance.

Immediately toward the shaft of the bone (or toward the middle of the ossification centre) there is usually an area of rarefaction.

Causes of deficiency.—Inadequate intake is the only common cause. The diagnosis should be suspected in any child that has been artificially fed and who has not been given fruit juice or vitamin supplements.

Subclinical deficiency.—There are many cases of incipient scurvy. Unfortunately, there is no readily available way to check for this condition. The symptoms listed by textbooks are simply symptoms of the ill child. A strong suspicion should be aroused by history of an inadequate diet and there is one sign which is reasonably reliable. Inflate a blood pressure cuff around the child's arm (or leg) to a pressure of 40 mm. Hg and leave it for four to five minutes. Remove it and examine the extremity for petechial hæmorrhages. If many are present, you may infer damage to the vascular system. The diagnosis is incorrect in the absence of a clear-cut history of deficient intake.

Treatment of deficiency.—Fruit juice is cheaper than vitamin pills and nourishing to boot. In severe cases several tablets of 100 mgm. ascorbic acid may be given daily. The deficiency is apparently specific and an adequate diet and/or the vitamin is all that is needed. Like most such diseases, scurvy is more easily prevented than cured. A few moments spent in instructing mothers should result in nearly complete elimination of the disease.

Ascorbic acid has no use except to prevent or cure specific deficiency. It has been used as a treatment for Vincent's angina and pyorrhœa entirely without effect. Think of the possibility of scurvy in any artificially fed infant and inquire about dietary supplementation. Remember that most subclinical scurvy *ain't*. Occasionally mothers unintentionally cause scurvy by heating fruit juice or by adding a pinch of soda to it. Both of these destroy the ascorbic acid.

VITAMIN D

Rickets, the childhood form of vitamin D deficiency, is very common in mild form. Far-advanced cases are seen with increasing rarity. For that reason this brief discussion will cover only the mild form of rickets seen so frequently in private practice.

Vitamin D is manufactured in the skin by the action of certain wave-lengths of ultraviolet light. The disease is seldom seen in areas where children have sufficient exposure to the sun on a year 'round basis. The history of the disease is interesting, for it appears to have been exceedingly rare until the refinement of our civilization to its present state nearly stopped the exposure of infants to sunlight and out-of-doors living. Since the human organism, in the absence of sufficient sunlight, has no other source of the vitamin, artificial feeding is necessary. Most children of the middle and upper economic groups are given a sufficient supply, but it is frequently discontinued too soon. During the entire period of bony growth there is need for the vitamin. At about age four the diet of the child usually widens sufficiently in scope and his exposure increases so that no further supplementation is necessary. Before that time a part of the requirements may be met by the artificially enriched foods but seldom is the entire need fulfilled.

The disease is essentially an interruption of the proper deposition of bone. Osteoid tissue, which normally becomes calcified to form bone, does not so calcify in the presence of an inadequate amount of vitamin D. It is important to remember that the formation of osteoid tissue is not interfered with. Mild cases, such as those we commonly see, seldom progress to the stage of deformity.

Signs of deficiency.—Early rickets offers diagnostic difficulty. The best indication is a carefully taken history which indicates deficient intake. This history is one of the essential features of the diagnosis and is too frequently neglected. Craniotabes is one of the first signs commonly encountered and is most frequently seen between the ages of four and eight months. It consists of soft spots (from the size of a quarter to the size of a silver dollar) in the posterior half of the skull. The bone may be indented and gives the sensation on pressure of indenting a punctured ping pong ball. Remember that this sign usually disappears by the end of the first year. Concurrent with it there may be softening of the borders of the anterior fontanelle, but this alone is by no means diagnostic.

In older children asymmetry of the skull may be striking and there may be early cranial bossing. This bossing is simply the presence of four rounded protuberances, one in each quadrant of the head giving a "squarehead" appearance. It is not marked in early cases. In con-

sidering skull asymmetry remember that there are tremendous normal variations in the cranium of infants. Some stupid-looking, lopsided babies are normal and a few have even become president. Slight thickening of the wrists and ankles may be perceptible at this stage, but not very often. Delay in dentition occurs but is more frequently an hereditary thing than a sign of disease. Actually, a good history and realization that minor rickets is common are the two most important factors in diagnosis.

The x-ray performs signal service in this condition. While I hesitate to recommend the frequent use of radiography, knowing such recommendations are frequently carried to the point of utter foolishness, this is one case where the procedure is frequently valuable. It should be done in suspected cases *after* a good dietary history and a confirmatory sign or two have been elicited. The x-rays should never be used for screening because of the cost to the patient. The distal end of the ulna is the best place to demonstrate early rickets. There is a cupped or concave appearance with a frayed, "rotten fence post" look to the end of the bone. The distance between the ulna and the carpals or metacarpals appears much increased. (Osteoid tissue is not visible in radiographs.) The shafts are less dense than normal and trabeculæ appear prominent. In healing rickets a white line appears just distal to the frayed ends of the bone. This represents the zone of preparatory calcification and is gradually fused with the shaft as healing continues. By following this process, the x-ray can be a good evaluator of treatment.

Causes of deficiency.—Rapid growth increases the demand for vitamin D. This should be kept in mind particularly in premature infants. The most frequent cause of deficiency is insufficient supplemental intake in a baby who is seldom exposed to sunlight. Negro children seem particularly susceptible.

Subclinical deficiency.—Here, I believe, is an excellent example of the mixup about subclinical deficiency. Rickets is rickets, whether in its earliest stage and detectable only by microscopic examination of the bone or whether advanced to the point of permanent deformity. When we try to make a definite disease out of the subclinical deficiency we soon get in hot water. Speak, if you will, of subclinical pneumonia. Unquestionably it exists but it is identical with pneumonia only in such a stage that diagnosis by clinical means is unlikely. I have little belief in the fact that a subclinical deficiency is an entirely different entity somewhat like a psychoneurosis and related to the true deficiency by no symptoms at all except the symptoms of illness.

Treatment of deficiency.—This depends entirely on the severity of the disease. From 1,500 I.U. daily for the mildest cases to 5,000 I.U. for the most advanced is sufficient. When healing is well progressed the mother can usually take over all responsibility after a few minutes' instruction.

Points to remember.—Prevention of rickets is easy. There is no disagreement about the fact that vitamin D should be given in some form to all infants and young children. Remember to inquire carefully about the intake of this vitamin and to be sure that they continue to take it until at least the age of three.

MULTIVITAMINS

Without a doubt most deficiencies are deficiencies of general nutrition and not of a specific substance. The possible exceptions are infantile lack of vitamins C and D. This fact of multiple nutritional deficiencies has been twisted in support of one of the greatest sources of waste of money in our country. The best treatment of nutritional deficiency is nutrition, *not pills*. There is no cogent reason to supplement the diet of a healthy adult with vitamin preparations. Millions of people have been convinced that they just cannot feel well without their daily pill and this, to me, appears silly. If a person does have an inadequate diet he can be helped a great deal more by adequate instruction than he can be helped by a pill.

ERRATUM

The paper by Drs. Fyles and Rose on "Corticotrophin in Allergic Disease" (May 1954, p. 551) contains a table (Fig. 1) in which the creatinine values should be shown with a decimal point, 1.2; 2.2, etc.

The same correction applies to the first values for ketosteroids and creatinine shown in Fig. 1 in a second paper by these authors on p. 644 of the June issue, on "The Use of Oral Compound F. in Asthma."

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SUCCINYLCHOLINE – A CONTROLLABLE MUSCLE RELAXANT

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ADEQUATE MUSCLE RELAXATION is a requirement for good surgery and for other therapeutic procedures. Since the beginning of modern anæsthesia in 1846 surgeons have depended on the anæsthetic agent – ether, chloroform, or some spinal anæsthetic drug – to provide relaxation. There is no doubt that in many patients the necessity for abdominal muscle relaxation has involved deeper anæsthesia than would have been required simply to overcome pain. It had long been a dream that some drug would become available which would safely provide relaxation without relation to analgesia or unconsciousness.

In 1942, my colleague, Dr. Enid Johnson, and I had the good fortune to demonstrate that the old drug curare could induce such muscle relaxation in patients under anæsthesia effectively and with apparent safety.[1] Other anæsthetists (notably Cullen,[2] Whitacre,[3] Knight[4] and Smith[5] in the United States; Gray[6] in England; and Hudon[7] in Canada) soon confirmed our findings in a large series of cases, and the revolutionary idea of using curare as an adjunct to anæsthesia spread into almost every operating room throughout the world. This drug met a real need in a way which no other drug had done, and surgeons were as pleased as anæsthetists because it made some of the most difficult parts of operations easier.

It is not surprising, therefore, that research began in pharmaceutical laboratories to discover other drugs with curare-like action which could compete with the original d-tubocurarine extract made from the South American jungle plant *Chondrodendron tomentosum*. The following are some of the drugs advocated for use as muscle relaxants which appeared on the market during the decade from 1942 to 1952: β-erythroidine, Myanesin (Tolserol), gallamine (Flaxedil), decamethonium (C-10 or Syncurine), mytolon (Win. 2747), and di-methyl-ether d-tubocurarine (Metubine or Mecostrin). My colleagues and I have had opportunity to give to all of these drugs a fairly adequate clinical trial. Our considered opinion is that, in spite of certain minor differences, all of them do produce muscle relaxation with reasonable efficiency and safety, when used intelligently in proper dosage. Since each drug has a different dosage basis their very multiplicity has been confusing to some anæsthetists, and inevitably accidents have resulted from this confusion, but we have come to the conclusion that there is no essential difference as regards mode of action or clinical effectiveness between d-tubocurarine, methylated d-tubocurarine, gallamine, or decamethonium. However, all of these drugs are poisonous under certain circumstances, the effect of overdosage being the same – respiratory depression, apnœa, anoxia, excessive bronchial secretion, and death. The safeguards to be taken in their clinical use are therefore essentially the same – individualization of dosage, and adequate pulmonary ventilation with oxygen administration through a free airway. In our own practice we returned to using the original curare preparation because we felt that where there are only minor differences in drugs the safe practice is to use only one regularly rather than many.[8]

This was the situation regarding relaxant drugs when in 1952 a new one, succinylcholine (also called diacetylcholine, suxamethonium, Brevedil, Scoline and Anectine) became available. Bovet reported the muscle-relaxing properties of succinylcholine in Rome in 1949[9] and again in New York in 1951.[10] Von Dardel and Thesleff in London in 1951 reported[11] clinical experience with succinylcholine. I first saw the drug used by Foldes in Pittsburgh in the spring of 1952,[12] and later the same year Little, Hampton and Grosskreutz of New Haven[13] reported more fully on its clinical use. As soon as I saw the drug used in the operating room I was deeply impressed by its possible clinical advantages, and we began a study which now comprises more than 1,000 administrations and which is still continuing. Succinylcholine most nearly approaches decamethonium in the nature of its muscle-relaxing action but the great difference between it and all other relaxing drugs is in the extremely short duration of its activity. A single dose of decamethonium or of d-tubocurarine may be effective for 20 minutes, but the action of succinylcholine lasts for only two or three minutes. One might think of this as a disadvantage,

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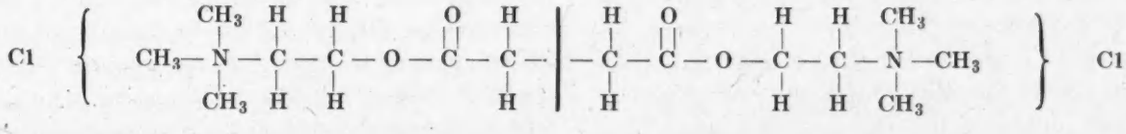
and so it seemed to Bovet, but this short action brings the supreme advantage of *controllability*.

One need hardly digress to explain the advantages of controllability in drug action, but I feel I must say a word on this subject from the anæsthetist's point of view. The longer I practise medicine the more I am impressed by the great and often unpredictable variations between human individuals. The laboratory pharmacologist notes these variations even among such simple animals as frogs or mice, and he plots his curve of drug action by striking an average among the high and low dots on his chart. The anæsthetist, on the other hand, is administering potentially lethal drugs to human individuals who are infinitely more variable than frogs, and he dare not just strike an average and disregard those who may be hypersensitive to any particular drug. This is why controllability is of paramount importance. I prefer the gases (cyclopropane, ethylene, or nitrous oxide) to other anæsthetic agents because they are so rapidly excreted by the lungs that the depth of anæsthesia produced can be almost instantly under control. Conversely, agents which become bound up with the tissues, and which must pass through liver and kidneys for excretion, are potentially more hazardous in certain individuals. Curare and most of the other relaxant drugs are excreted largely through the kidneys, and usually quite rapidly, but we have all seen cases where for some reason the curarizing effect of an ordinary dose of one of these drugs has taken hours to disappear. This has worried us, has led to anxious hours of maintaining controlled respiration, and has been I believe in some instances the cause of death. So it is understandable that we were excited about the possibility of having at hand a really controllable relaxing agent.

Succinylcholine chloride contains two molecules of acetylcholine chloride joined together at the alpha methyl groups thus:



It is rapidly hydrolyzed by the pseudo-cholinesterase of the plasma, breaking down mainly into choline and succinic acid, both of which are normally-occurring metabolites. It is classed with the depolarizing muscle relaxants (like decamethonium rather than tubocurarine).

According to de Beer *et al.*[14] "The exact mechanism of succinylcholine is not yet fully elucidated, though all evidence points to some interaction between the chemical and the cholinesterases. It seems probable that succinylcholine exerts its effect by occupying receptor sites of voluntary muscles which are normally occupied by the acetylcholine which is produced in response to nerve impulse. Whereas acetylcholine is almost instantaneously destroyed by the true cholinesterases of tissue, succinylcholine is little affected by this enzyme, therefore, it probably remains in the vicinity of the end-plate for several minutes causing persistent depolarization as evidenced by muscle flaccidity. It is suggested that the termination of the action of succinylcholine is the result of its rediffusion back into the blood stream and its rapid hydrolysis there by the pseudo-cholinesterase of the plasma."

An interesting clinical observation during the administration of succinylcholine is the occurrence of fibrillary twitching or fasciculation in scattered muscle fibres throughout the body. This is due to a transitory stimulation of groups of muscle fibres before flaccid paralysis develops. In a few patients the twitchings are sufficiently marked to make one think of an impending convulsion, but I have never seen them last for more than a few seconds, and actually they are of some practical value in giving a visual indication of the onset of muscle relaxation.

A single intravenous injection of succinylcholine of sufficient strength to cause complete relaxation (40 to 60 mgm. in an average adult under anæsthesia) will be effective for only two or three minutes, and is therefore useful only for very short procedures such as endotracheal intubation or the reduction of a dislocation. Controllable relaxation over long periods of time is obtained by giving succinylcholine in dilute solution by intravenous infusion. We have recently[15] reported this technique in more than 600 abdominal operations, and we are continuing to find it a satisfactory method. Our patients have been of all ages, from three to 93 years, and the operations are the usual variety seen in a busy general hospital. We dilute 500 mgm. of Anectine or one of the other succinylcholine chloride preparations in 500 c.c. of saline, set up an intravenous infusion, and regulate the speed of the drip in accordance with the need for muscle relaxation. In this way relaxation can be turned on or off as may be required. The rate of drip varies from a few drops a minute to 120 drops. The total amount of drug given to one pa-

tient varies from 50 mgm. to 900 mgm., depending on the patient and the nature and duration of the operation.

The following points in the use of succinylcholine in surgery we believe to be of the utmost importance:

1. The drug is not an anæsthetic in any sense of the term and should not be expected to provide any analgesia or unconsciousness. It is essential, therefore, that a patient receiving succinylcholine should be properly anæsthetized *before* the drug is given, and that proper anæsthesia should be maintained throughout the operation. There may be a temptation to quiet a restless patient by increasing the dose of succinylcholine but such a patient really needs more anæsthetic, not more muscle relaxant.

2. Like every muscle relaxant succinylcholine may depress or entirely suppress respiration. Means to control respiration and instantly to provide adequate pulmonary ventilation must always be available. I have become quite convinced that really adequate pulmonary ventilation is one of the very important factors in reducing the hazards and complications of anæsthesia, and that it is one of the most neglected of our safeguards.

3. To give succinylcholine properly the anæsthetist must be constantly on the alert to coordinate the individual requirements of the particular patient for anæsthetic agent and for relaxing agent. There is a very great variation between patients, and there is a variation in requirements of the same patient during different stages of one operation. The aim should be to use the minimal quantities of all drugs consistent with efficiency. This technique is one for the careful, observant anæsthetist and not for a careless beginner or for a nonchalant old-timer.

From our experience, therefore, we feel that the efficiency, relative safety and clinical applicability of succinylcholine is now well established. We are giving continuing study to possible side effects and toxicity. There have been several reports from English anæsthetists of long-continued apnœa and flaccidity following injection of ordinary doses of the drug. This reaction has been ascribed to an abnormally low level of pseudo-cholinesterase in the patient's plasma, and is said to be more likely in patients with impaired liver function. In our opinion, the doses of succinylcholine considered ordinary by many English anæsthetists are unnecessarily large. The complication of prolonged apnœa with low pseudo-cholinesterase might usually be avoided if a careful attempt to titrate the dose of succinylcholine infusion required for that particular patient. This must be done by clinical observation of the effect on respiration, since it is obviously impractical to make blood cholinesterase estimations on all our patients before anæsthesia.

Another observation made during prolonged succinylcholine administration in combination with cyclopropane anæsthesia is the occasional rise in blood pressure to a level which may cause unnecessary bleeding at the site of operation. Since this tendency to hypertension can usually be controlled by vigorous attention to active pulmonary ventilation, we suspect that it may be due to CO_2 accumulation. A rise in the level of blood CO_2 may develop insidiously in spite of good oxygenation when one respiratory depressant is piled on top of another. We hope soon to make further studies along this line, using an infra-red CO_2 analyser through which the patient's exhalation may be passed. There is, however, some laboratory evidence in Bovet's early work that succinylcholine does tend to raise blood pressure by some inherent property of the drug itself. In any case the question is of little clinical importance provided the precautions already outlined for the careful administration of succinylcholine are observed.

I shall not attempt here to go into the broad question of the toxicity of curare-like substances in general, and the question whether their introduction into clinical surgery has increased or decreased the patient's chances for survival. Beecher of Boston has just completed a five-year survey of deaths occurring during 600,000 operations in 10 American university hospitals. The report will soon be published and will undoubtedly lead to much controversy. The survey comprises a statistical analysis of many factors with regard to the use of muscle relaxants in combination with various anæsthetic agents, and Beecher has interpreted the findings as showing that a patient who receives any muscle relaxant is much more likely to die than one who does not. One cannot question the figures, which have been compiled with great care and objectivity, but many of us will not agree with the inferences drawn from the statistical tables. There are just too many variable factors involved to allow us to form any such positive conclusions from the figures of this survey. I have always been care-

ful to emphasize that curare and every curare-like drug are poisonous, and must be used intelligently. The fact that a drug has toxic potentiality does not mean that it should never be used. If Beecher's survey proves anything, I think it proves that there is need for more good anæsthetists, trained to use their brains intelligently, individually and on a level with the exacting standards of good medicine. The best anæsthetist is not the one who uses a complicated technique just to be clever, but one who reaches selectively into the present rich storehouse of available drugs for the benefit of the particular patient under his care, and who unobtrusively makes conditions so favourable that the surgeon can do his best work. I still think that muscle relaxants are here to stay.

In conclusion, I want to add just a few words about the use of succinylcholine in therapeutic procedures of interest to the physician. It has been given most effectively to many patients undergoing shock therapy for psychiatric conditions. This was, indeed, the first clinical application of the modern curare preparations,[16] but some psychiatrists had abandoned the longer-acting relaxants because of difficulty in controlling them. Succinylcholine may be given in quite small doses following a hypnotic dose of Pentothal and the patients seem to develop no side effects or nervous upset. However, since the effect of any muscle-relaxing drug may be terrifying if it is given to a conscious patient, and succinylcholine may be actually painful on account of the primary stimulation of some muscle fibres (fasciculation), I believe it is important that it be given only to patients who are already asleep.

Succinylcholine has been used with success in several severe cases of tetanus. In one patient at Hartford,[17] convulsions were kept under control for several days by a continuous intravenous drip of succinylcholine, and the disease subsided without leaving any permanent damage. There was no evidence of a build-up of the drug in the body, and none of the profound depression and shallow inefficient respiration which has made the use of barbiturates so hazardous in the treatment of tetanus. Indeed, I see no reason why succinylcholine should not be given in convulsive states due to eclampsia, overdoses of local anæsthetics, strychnine or other poisons. In many of these cases control of the convulsion *plus* adequate ventilation with oxygen is all the treatment that may be needed.

SUMMARY

A new muscle-relaxing drug succinylcholine (diacetylcholine) is described, and its controllability on account of its extremely short action is emphasized. A dilute solution (0.1%) has been given by intravenous infusion to more than 600 patients undergoing abdominal operations; relaxation can be turned on or off according to the speed of the drip. It is important to remember that neither this nor any of the curare-like drugs is an anæsthetic agent, and they must always be given carefully in combination with an anæsthetic drug. The use of succinylcholine in convulsive shock therapy and in control of convulsions in tetanus and other diseases is mentioned.

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RÉSUMÉ

Dans cette communication, l'auteur rappelle la nécessité d'obtenir une résolution musculaire satisfaisante afin de faciliter la tâche du chirurgien. Il évoque les circonstances qui ont mené à la mise au point du succinylcholine dont la caractéristique la plus importante est son extrême brièveté d'action. Son usage peut ainsi être rigoureusement contrôlé. Ce curarisant de synthèse produit des secousses fasciculaires et fibrillaires avant que son action paralysante n'apparaisse. Une dose habituelle de 40 à 60 milligrammes n'agit que pendant 2 ou 3 minutes. Il est donc préférable de l'administrer en solution diluée, par voie intra-veineuse (500 milligrammes dans 500 cc. de sérum physiologique) à raison de quelques gouttes à 120 gouttes à la minute. La dose totale peut varier de 50 à 900 milligrammes. Ce produit ne possède aucune propriété analgésique ou sédative. Il est donc impératif que le malade soit sous anesthésie avant de s'en servir. Il peut, par contre, déprimer ou même abolir la ventilation pulmonaire. Il est d'une importance primordiale d'être en mesure d'administrer la respiration assistée. L'anesthésiste doit enfin suivre son

malade de près afin de juger la dose exacte qui lui convient, et qui peut être sujette à des variations individuelles considérables. La détermination du taux de cholinestérase du sérum n'offre qu'un intérêt théorique et ne saurait en aucune circonstance remplacer l'observation clinique dans la détermination des doses du succinylcholine. La tendance qu'on lui impute d'élever la tension artérielle peut provenir en partie de l'accumulation d'oxyde carbonique que tout dépresseur de la fonction respiratoire peut provoquer. Il peut aussi être employé en électrochocs dans les cas de tétanos et pourrait aussi servir dans l'éclampsie et l'empoisonnement par la strychnine, etc.

M.R.D.

ANÆSTHESIA FOR CARDIOVASCULAR OPERATIONS*

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SURGERY OF THE HEART and great vessels is a rapidly expanding field. Operations on the mitral and pulmonary valves and anastomoses of the aorta and pulmonary artery are being performed with increasing frequency and safety. We know of no other field in which the anæsthetist has more to offer to patient and surgeon alike. The precarious state of the patient's cardiovascular reserve, and the serious and sometimes deleterious manipulations of the surgeon on the heart call for the exercise of great skill and judgment by the anæsthetist.

Another important aspect of this field to the anæsthetist is the stimulus toward a better understanding of cardiovascular and respiratory physiology. Our understanding of many cardiovascular reflexes and the effect of various drugs on these reflexes, on the coronary circulation and on the myocardium is incomplete. Our knowledge of the effect of anæsthetic agents on the coronary circulation and cardiac output is so limited that there is no agreement as to which anæsthetic agents are most suitable for patients undergoing intracardiac surgery.

CHOICE OF ANÆSTHETIC AGENT

At the Mayo Clinic we have found nitrous-oxide-oxygen induction and maintenance with diethyl ether to be eminently satisfactory for operations on the heart and great vessels. Other anæsthetists have favoured such agents as thiopental sodium (pentothal sodium) and curare combinations with or without intravenous procaine and combinations using cyclopropane. We realize that there are certain disadvantages in the use of ether for these patients; the main one being the hazard of anoxia during induction, if the patient struggles, coughs, vomits or produces an excess of secretions during induction. However, in a series of more than 100 operations for the relief of mitral stenosis in which the nitrous-oxide-oxygen-ether combination has been used, there has been no death directly traceable to difficulty in induction of ether anæsthesia.

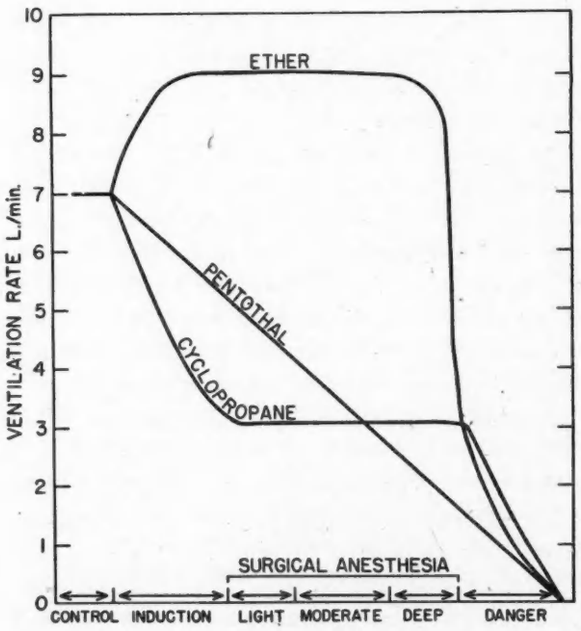

Fig. 1.—Variation in ventilation rate during anæsthesia with three different agents. The data for this figure were contributed by Drs. Patrick, Hunter, Possati and Faulconer.

The old adage that the anæsthetic agent which the anæsthetist handles best is the most suitable, applies to intracardiac operations. We have found diethyl ether to be very satisfactory for anæsthetizing patients for intrathoracic surgical procedures. We have applied our experience and knowledge in the use of this agent to anæsthetizing patients for intracardiac operations. We have found that control over the patient's respiratory

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From the Section of Anæsthesiology and Intravenous Therapy, Mayo Clinic, Rochester, Minnesota.

activity is better when ether anæsthesia is employed than when thiopental or cyclopropane is used.

During the time that the patient with closed pleura is anæsthetized, we believe that the patient's respiratory activity will be more nearly normal with ether than with thiopental or cyclopropane. The patient's minute volume of respiration will be normal or greater than normal under ether anæsthesia. It will be depressed in proportion to the depth of anæsthesia with cyclopropane or thiopental anæsthesia. Figure 1 shows the depth of anæsthesia as determined from the electroencephalographic pattern on the abscissa and the ventilation rate in litres per minute on the ordinate. The increase in the ventilation rate in most levels of surgical anæsthesia with ether and the depression of the ventilation rate, even under light surgical anæsthesia with thiopental and cyclopropane should be noted. These facts do not fit the situation when the pleura is opened, so we assist the patient during the entire time that the pleura is open under ether anæsthesia, if a defect of the heart or great vessels is to be corrected. Some evidence is being gathered that thiopental *per se* acts as a myocardial depressant and tends to reduce the cardiac output. If this evidence is substantiated, it will serve as an argument against the use of thiopental for these severely debilitated patients.

TEAMWORK

The importance of teamwork has been emphasized by many. Progress in the field of cardiac surgery as well as adequate and safe care of each individual patient rests on the co-operation of the cardiologist, the pædiatrician or clinician, the physiologist, the surgeon and the anæsthetist. Likewise, in the operating room the surgeon, anæsthetist, surgical assistants, instrument nurse, circulating nurse and other members of the team must function in a closely co-ordinated fashion if the best results are to be obtained. The physiologist and internist are primarily concerned with the accurate diagnosis of the patient's condition as well as evaluation of the patient's functional reserve. The internist is further responsible for increasing that reserve to the maximum obtainable under the conditions of the abnormal circulation. The patient who comes to surgery after adequate treatment with rest, digitalis and diuretics is in much better condition to withstand the manipulations of the surgeon and anæsthetist than one who is poorly prepared and partially decompensated.

The basic principles of the anæsthetic management of patients undergoing operation for the relief of mitral stenosis and pulmonary stenosis have been outlined by Pender.[1, 2, 3] The cardinal principles which we shall discuss are (1) adequate oxygenation of the patient's vital tissues, (2) the maintenance of light levels of anæsthesia and (3) adequate, judicious and wise supportive therapy. Most of the following remarks will concern these three cardinal principles.

PREOPERATIVE VISIT AND PREMEDICATION

Preoperative evaluation of the patient frequently will give the anæsthetist a fairly accurate idea of what he can expect at the time of operation in the way of cardiac reserve and what factors may need special attention during the period of anæsthesia and operation. Premedication is determined by age, size, weight and physical state of the patient. It is purposely kept light. For the average adult, morphine 10 mgm. (1/6 grain) and pentobarbital sodium (nembutal) 100 mgm. (1½ grains) are used.

We have been impressed by the show of confidence and courage with which most of the patients face an operation for a serious defect of the heart or great vessels. Perhaps they realize their growing disability and have a real hope of relief from the operation. At any rate, most of them do face the prospects of operation and anæsthesia with confidence and, being anxious to have the procedure, are equally anxious to co-operate and do not object to the choice of an inhalation anæsthetic. One objective of the preoperative visit is to increase this confidence and to allay as much of the apprehension as possible.

Atropine is avoided routinely in the premedication. This measure is an effort to avoid the tachycardia that may accompany the use of atropine especially in young children. It is hard to assess just how much harm and how much good we have accomplished by elimination of atropine. Only rarely has its elimination been accompanied by excessive secretions during induction. It is felt that we have probably avoided many episodes of tachycardia and hyperthermia especially among young patients.

INDUCTION

Anæsthesia for these operations is induced with a mixture of 80% nitrous oxide and 20% oxygen.

The carbon-dioxide absorber is included in the circuit. The anæsthetist must utilize all his skill in order to have perfectly smooth induction with adequate oxygenation of the patient's vital tissues.

The electrocardiographic and electro-encephalographic tracings of a 23 year old patient in the course of anæsthesia for surgical correction of a patent ductus are shown in Fig. 2. This patient had been a severe cardiac cripple with marked cyanosis because of a right-to-left shunt through a patent ductus arteriosus when she came to surgery. The risk was recognized as being serious before anæsthesia. As anæsthesia reached a certain point, the patient became more cyanotic and insertion of an endotracheal tube seemed important. An attempt was made at the first arrow on Fig. 2. The electrocardiogram showed cessation of heartbeat, and we were warned immediately. Intubation was stopped, and oxygen was administered. At the time of the third arrow the surgeon was alerted to enter the chest for cardiac massage. However, the patient's heart gave two or three beats which were palpable at the radial pulse, stopped again for about six seconds and then began to beat in a more or less regular fashion. The operation was continued and a large patent ductus was divided and closed. However, as the patient was being taken from the operating room to her own room, she again became cyanotic and cardiac arrest occurred. Efforts at cardiac massage and resuscitation were unsuccessful.

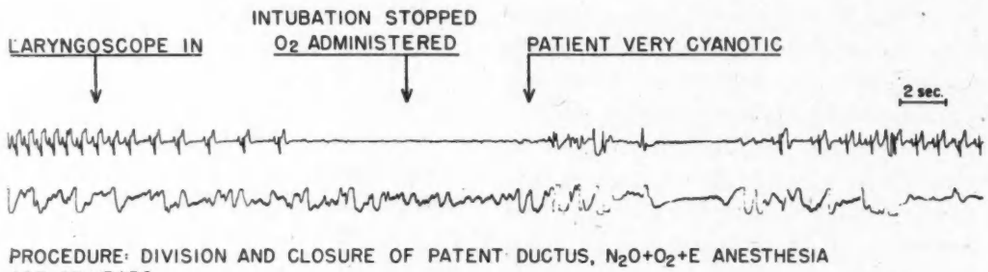

Fig. 2.—Cardiac arrest during induction of anæsthesia. Upper tracing is electrocardiogram and lower tracing is an electroencephalogram. Reprinted from Ridley, R. W.: Safety in Anesthesia, *South Dakota J. Med. & Pharm.*, 6: 113, 1953.

Probably intubation requires the deepest level of anæsthesia. Once intubation has been performed and the cuff inflated, anæsthesia may be maintained at a relatively light plane. The intubation itself should be performed smoothly and swiftly and a good state of oxygenation should be maintained throughout the procedure. If there is breathholding or cyanosis following intubation, the patient's lungs should be inflated with oxygen. Coughing and straining should be prevented if possible.

MAINTENANCE OF ANÆSTHESIA

Once the pleura has been opened, we assist respiration manually by making intermittent positive pressure on the bag of the gas machine until the pleura has been closed and a Glover suction apparatus is functioning. This procedure helps maintain an adequate respiratory margin so far as avoidance of anoxic anoxia is concerned. If it is important for adults, it is even more important for children and particularly for infants. Small children do not tolerate an open thorax without some assistance to respiration. An addition to the anæsthetist's armamentarium for this purpose is the use of the Edison ether vaporizer. It is used with a modified Ayre's tube, the open end of which may be occluded intermittently by the finger of the anæsthetist to inflate the lungs. A manometer is included in the circuit in order to avoid the possibility of overinflating the lungs. This arrangement has been particularly useful for infants and small children because of the accurate control it gives over the child's respiratory activity.

The oxygen saturation of the arterial blood in a four year old child undergoing surgical correction of a patent ductus is shown in Fig. 3. This child also had an intracardiac shunt. This illustrates the little appreciated hazard of intratracheal and intrabronchial suction. The anoxia produced by suction may be severe. It probably can be explained on the basis that oxygen is aspirated from the patient's lungs and some collapse results. If anæsthesia is light, breathholding may occur with resulting desaturation of hæmoglobin. Although intratracheal and intrabronchial

aspiration may be desirable and lifesaving, they are not without some hazard.[4]

The second cardinal principle of anæsthesia for intracardiac operation is the maintenance of light levels of anæsthesia. By "light levels" we mean plane I of stage III and frequently even lighter to the point of being stage I according to the classification of Guedel. The exact level of anæsthesia will depend primarily on two factors:

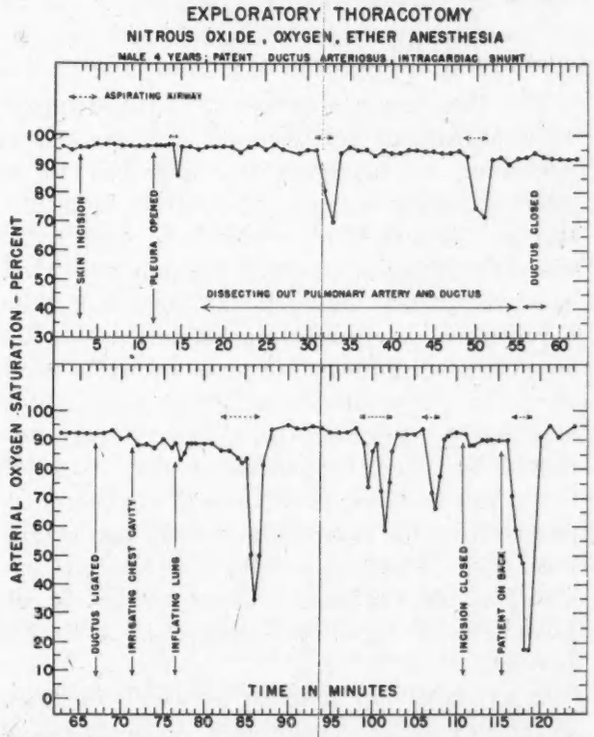

Fig. 3.—Effect of tracheobronchial aspiration on the oxygen saturation of arterial blood during exploratory thoracotomy.

(1) the cardiac abnormality from which the patient is suffering and (2) the degree from which he suffers from this abnormality.

Clinically, the patients are kept in a light plane of anæsthesia during intracardiac operation. In the presence of severe mitral stenosis, anæsthesia has been so light that the patient has moved his head during operation. When this occurs, we always reassure the surgeon by telling him that it is better to have the patient moving but with adequate blood pressure than lying quietly with dangerous hypotension. Apparently few things annoy the surgeon more than trying to operate on a moving patient. However, this is one instance in which he should appreciate the value of having the patient in an extremely light stage of anæsthesia.

Equally incapacitated patients with other conditions, such as a patent ductus or tetralogy of Fallot, may require deeper anæsthesia. The reason for this is not entirely clear, but we suspect that patients with these other defects can respond to the vasodilatation caused by anæsthesia by increasing the cardiac output. Some of the patients with mitral stenosis do not seem to be able to effect this response. The intimate details of this interesting reaction, however, await further elucidation.

Certain abnormalities of the heart result in a fixed cardiac output regardless of the demands placed on the organ and beyond this limit the heart cannot respond. Mitral stenosis is an example of such a situation. All of the anæsthetic agents which produce general anæsthesia have been thought to produce vasodilatation usually in proportion to the depth of the anæsthesia. An increasing depth of anæsthesia produces an increasing vasodilatation but a critical point is passed at which the cardiac output cannot increase, and the blood pressure must fall. In patients with severe mitral stenosis also, even before the blood pressure has decreased at all seriously, the patient will begin to perspire profusely as anæsthesia at the surgical level begins. This may be interpreted as an active reflex discharge of the sympathetic nervous system in an effort to compensate for the vasodilatation brought about by the anæsthetic agent. However, the point at which this compensation is no longer completely effective, is reached rather quickly and then the systolic blood pressure progressively falls with deepening anæsthesia. Indeed, in some patients a rather fine degree of control can be exerted over the blood pressure by merely turning the ether dial up or down. Such patients have little reserve and must be accorded every assistance if they are to survive the operative and the postoperative period.

Our studies of the electroencephalogram during anæsthesia for mitral commissurotomy likewise reveal that the patients are maintained at very light levels of anæsthesia. Utilizing the Courtin, Bickford and Faulconer classification of seven levels[5] (Fig. 4), we were duly impressed that most of the time the patient is under anæsthesia he is maintained in levels 1 and 2 and only occasionally and for brief periods in level 3. There is a story here which is not yet clear. It is well recognized clinically that patients in shock require relatively little anæsthesia, and it has been known since Beecher[6] reported in 1938 that the electroencephalographic pattern in

experimental animals during deep anæsthesia is similar to that of hypotension. These observations have been confirmed by similar experiments in our laboratory. Therefore, we assume that the hypotension that develops in the severely incapacitated patient with mitral stenosis when he is anæsthetized contributes to the anæsthesia.

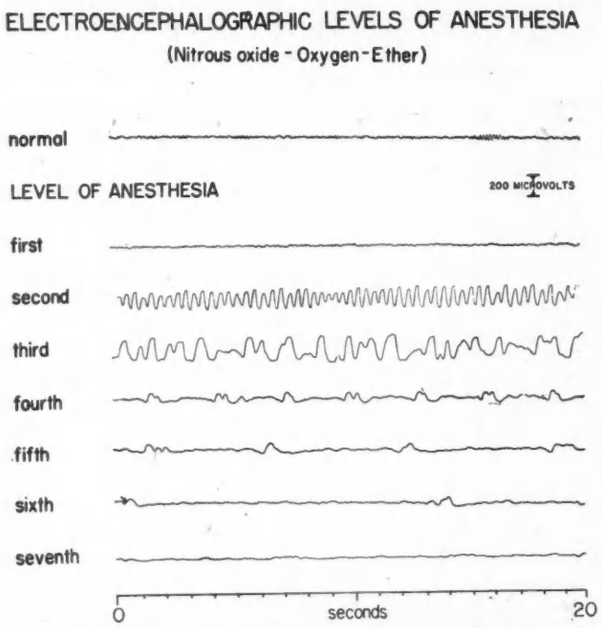

Fig. 4.—Electroencephalographic patterns characteristic of successive electroencephalographic levels of anæsthesia. Reprinted from Courtin, R. F., Bickford, R. G. and Faulconer, Albert, Jr.

Time is of importance in performing operations on the cardiovascular system. There is no disagreement with the idea that if the operation can be carefully and safely performed in two hours, it is better to do it that way than to take four hours. However, in our opinion, it is extremely important that the patient be anæsthetized smoothly and carefully and that all technical aspects of the anæsthesia and supportive therapy be completely and carefully attended to before he is engulfed in sterile sheets, and the anæsthetist no longer has an easy opportunity to readjust his apparatus. These technical features include a perfect airway, an air-tight system between the bag and the patient's lungs so that the patient's lungs can be inflated easily, proper insertion of needles or catheters into blood vessels for supportive therapy, and any other technical features that may contribute to the safety of the patient during the operation.

If it is important that all the technical features of the anæsthesia be properly attended to, it is equally important that the technical features of the operation itself be properly attended to, and to that end utilization of needed time is justified. It is true that speed often is essential in order that the patient should survive. Occasionally it may become a matter of dire emergency for the surgeon to open a stenotic valve so that the patient can survive the alterations which anæsthesia and surgical procedures have imposed on the failing circulation. Speed likewise may be of paramount importance when sudden severe hæmorrhage occurs.

SUPPORTIVE THERAPY

The third cardinal principle in the management of patients for intracardiac operations or operations on the great vessels is the use of judicious, adequate and conservative supportive therapy. The primary problem is what to do about the hypotension which the patient is likely to have during much of the operation. This hypotension may result from the anæsthesia, the surgical procedures or loss of blood. How much blood to replace and how fast to replace it is a matter of judgment. As a general rule, one should be a little behind rather than ahead so far as loss of blood is concerned. However, the more critical the state of the patient, particularly when the patient is a child, the less one can afford to let the loss of blood exceed the replacement of blood by more than a limited amount.

It has been our practice to weigh the used sponges to obtain a rough guide for replacement of blood. It can be no more than a rough guide because the measured loss of blood will vary from the actual loss depending on the circumstances. If a considerable amount of blood is lost on the drapes as in the case of a severe spurting type of hæmorrhage, the loss of blood determined from weighing the sponges may fall considerably behind the actual loss. However, as a rough guide, weighing of the sponges and observation of the amount of blood in the suction trap may prove useful. Certainly in many patients it acts as a brake on the natural inclination of the person responsible for the replacement of blood, as he is likely to replace blood enthusiastically in the face of rather brisk hæmorrhage and hypotension. Under such circumstances, it is only too easy to overload the circulation, with disastrous results. It goes without saying that avoidance of pulmonary œdema in these patients is a much easier and safer practice than treating it once it has developed.

A word about aortic transfusion is pertinent here. We have not had to resort to intra-arterial transfusion during operations on the heart and great vessels. However, we do have the equipment necessary to perform immediate aortic transfusion, should it be indicated. As our knowledge of cardiovascular physiology increases and our understanding of the varying effectiveness and mechanisms of intra-arterial versus intravenous transfusions improves, we may utilize intra-arterial transfusions more frequently. One important indication for aortic transfusion, simple as it may be, is the fact that the intravenous needles or cannulæ may become dislodged at a critical time during operation, and if they cannot be replaced quickly, aortic transfusion might prove to be lifesaving. In some reports use of intra-arterial transfusion seems to have been considerably overrated.

The proper use of vasopressors for the control of hypotension is still a subject of debate. Although we are aware that some anæsthetists do use continuous intravenous drip of methoxamine hydrochloride (vasoxyl) or l-norepinephrine (levophed) during these critical procedures, we have not found routine use of vasoconstrictors necessary. Objections to the use of vasopressors are twofold: (1) The evidence is not clear that vasopressors are essential and that they are harmless. (2) The use of the vasopressor almost certainly will obscure the patient's immediate reaction to anæsthesia and may mislead the anæsthetist into believing that the patient is in better condition than he really is. In other words, even though a vasopressor may do no other harm, it may interfere with evaluation of the true status of the patient. Following the policy outlined by one of us (Pender), we have not used any drug or method without some specific indication.

COMMENT

The *sine qua non* of safe anæsthesia and supportive therapy for operations on the heart or great vessels is maintenance of the patient in as balanced and compensated a state as possible, from the very beginning of anæsthesia until he returns to his room. Our objective is to maintain the patient in the best possible condition and to avoid any complication that might occur. It is true that many times we are forced to treat certain complications, but it is far better to avoid trouble with these patients. Once their limited reserve is jeopardized by a bout of anoxic anoxia or a bout of stagnant anoxia, that is, hypotension, it may be difficult or impossible to bring them back to a reasonably stable condition. That is why we have emphasized the importance of preparing the patient for operation very carefully and paying close attention to all the details which will help to maintain him in a good condition through this perilous experience.

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RÉSUMÉ

Parmi les agents anesthésiques employés pour la chirurgie cardio-vasculaire, les mélanges de protoxyde d'azote et d'oxygène et les combinaisons de thiopental et de curare jouissent d'une grande faveur. La combinaison de protoxyde d'azote, oxygène et éther semble aussi avoir quelque avantage. La respiration peut être contrôlée plus facilement avec l'éther éthylique qu'avec le thiopental et le cyclopropane. On croit que le thiopental déprime la fonction cardiaque ainsi que son rendement.

La collaboration étroite de tous les spécialistes ayant affaire au cas est indispensable pour assurer le succès de l'entreprise. L'examen préopératoire du malade permettra à l'anesthésiste de juger de l'étendue de la réserve cardiaque; une prémédication délibérément faible est recommandable. L'atropine est déconseillée à cause de la tachycardie qu'elle peut provoquer, surtout chez les enfants. La narcose doit être aussi calme que possible et est habituellement basée sur un mélange de 80% de protoxyde d'azote et de 20% d'oxygène. L'intubation nécessite probablement un degré d'anesthésie très poussée. Une fois le tube en place, l'anesthésie peut être plus légère. Tout effort de la part du malade, comme tousser ou se débattre, doit être évité. Une fois la plèvre ouverte, la respiration peut être contrôlée d'une manière manuelle par pressions rythmiques sur le ballon. Ce procédé est d'une importance particulière chez les enfants. Le niveau précis d'anesthésie dépend de deux facteurs: 1°— le genre d'anomalie cardiaque à corriger; 2°—le degré d'incapacité qu'elle produit. L'oblitération du canal artériel et la correction de la tétralogie de Fallot demandent une anesthésie plus profonde que la commissurotomie mitrale. Certaines anomalies cardiaques entrainent un débit relativement fixe quelles que soient les variations de volume du champ vasculaire. Il importe donc de ne pas causer une vaso-dilatation inutilement dangereuse en poussant l'anesthésie profondément au niveau chirurgical. D'après la classification de Courtin, Bickford et Faulconer, l'anesthésie devrait être maintenue aux niveaux 1 et 2, et rarement atteindre le 3e. La durée de l'opération et de l'anesthésie est des plus importantes. Les détails techniques doivent être réglés à la perfection. En ce qui concerne le problème du sang perdu en hémorragie, il est sage de maintenir le volume sanguin à son niveau normal si possible; mais, à tout prendre, il vaut mieux que le volume reste un peu au-dessous de la normale plutôt que de la dépasser. La pesée des compresses imprégnées de sang ne donne qu'une idée fort approximative de l'étendue de l'hémorragie. La circulation ne doit pas être surchargée afin d'éviter l'œdème pulmonaire. On doit cependant être prêt à faire une transfusion aortique à un moment d'avis. Les auteurs ne semblent pas convaincus de la nécessité essentielle des vaso-moteurs.

M.R.D.

CORTISONE IN THE TREATMENT OF THE OCULO-MUCOUS MEMBRANE (STEVENS-JOHNSON) SYNDROME

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IN THE HISTORY of this syndrome the names of Hebra,[1] and Stevens and Johnson[2] are prominent. The first-named in 1860 differentiated what he considered to be a specific entity, giving it the name erythema multiforme exudativum. This he described as consisting of an acute inflammation of the skin, characterized by an erythemato-papular or vesiculo-bullous eruption, together with involvement of the mucous membranes (oral lesions being particularly characteristic) and with lesions of the eyes sufficiently severe to cause blindness.

In 1922 Stevens and Johnson described two cases characterized by an eruptive fever, stomatitis and ophthalmia; they considered this symptom complex to be a new clinical entity. The cutaneous lesions were widespread, dark red maculæ, becoming brownish in colour in a few days, the eruption covering almost the entire body. The mouth and lips were inflamed, eroded and crusted. As the condition subsided residual hyperpigmentation without scarring remained. Both patients had purulent conjunctivitis. In one case panophthalmitis developed with total loss of vision and in the other diminution in visual acuity resulted owing to corneal ulceration.

The contribution of these workers has served to renew, rather than to initiate, interest in this disease; in fact, the latter has been under study for almost 130 years, the earliest references dating back to 1822 (Alibert and Bazin[3]). During the last thirty years numerous papers have been published describing several diseases as separate entities in spite of the fact that they all had important features in common, namely those described by the above observers. These diseases have been described as ectodermosis erosiva pluriorificialis (Rendu,[4] 1916; Klauder,[5] 1937), dermatostomatitis (Boader,[6] 1925), triple complex (Behcet,[7] 1940), mucosal respiratory syndrome (Stanyon and Warner,[8] 1945) and muco-cutaneous-ocular syndrome (Robinson and McCrumb,[9] 1950). This diffuse nomenclature has occasioned a certain amount of confusion. Recent authors (Ashby and Lazar,[10] and Robinson,[11] 1951) are of the opinion that these are all variants of the same disease, their reasons being that the disease stigmata are common to all and that as yet there is a lack of specific etiological factors.

CASE REPORT

On August 28, 1953, a 73 year old woman, who had been afflicted with progressive muscular atrophy for the past 30 years, was first seen by one of us. She had suddenly developed shortness of breath, palpitations, cyanosis and swelling of the ankles. The diagnosis of congestive cardiac failure with auricular fibrillation was made and the patient treated with digitalis, mercurial diuretics, bed rest and low salt diet. The therapeutic response was good but the arrhythmia persisted. On September 7 she developed urethritis and cystitis for which aureomycin, 1.5 gm. daily in divided doses, was prescribed. After three days of therapy the urine became normal. She remained well for about a month and then on October 4, 1953, she had a sudden, brief, vomiting attack after breakfast. That evening there was slight irritation in her throat, and at 4 a.m. the next morning she awoke feeling acutely ill, with sore throat, tenderness and swelling of the tongue, difficulty in swallowing, congestion of the nose and soreness of the eyes. At 7.30 a.m. she was propped up in bed and appeared distressed. There was flushing of the face, redness and swelling of the eyes and a distinct nasal quality to the voice. The temperature was 100.8° F. The skin was hot and dry, but there was no eruption. There were no palpable lymph nodes. The eyelids were puffy and the conjunctivæ slightly injected; the nasal mucosa was congested. The tongue appeared red, swollen and tender and was protruded only with difficulty. The uvula, soft palate and pharynx were injected and slightly œdematous. Examination of the lungs revealed a few fine rales at both bases. A diagnosis of acute upper respiratory infection was made and penicillin, aspirin, Benadryl, abundance of fluids, Glycothymoline and bed rest were ordered.

On the following morning the temperature was 100.4° F. The throat was extremely sore, swallowing was more difficult, nasal congestion was marked and the swelling of the tongue had increased. She had now developed a croupy cough, expectorating scanty amounts of thick, white, sticky sputum. The patient's condition deteriorated somewhat and on October 9 there were moist and dry rales in the lungs. The eyelids were greatly swollen; there was moderate injection of the conjunctivæ, and mucous discharge and crusting were present. The pharynx, soft palate, uvula and tongue were redder and more œdematous. The nose was obstructed and the hacking, croupy cough was extremely distressing. The submaxillary salivary glands were notably enlarged and tender. The temperature was 101.4° F. At this point aureomycin, 1 gm. at first and thereafter 0.5 gm. every six hours, was re-instituted. During the night her temperature reached 102.8° F., she was confused and delirious and by morning (October 10) she had become gravely ill. Her face was suffused, she was unable to articulate; respiration was laboured, weak and rapid, and she had lapsed into semi-coma. The tongue, protruding from the open mouth, was swollen, red and dry; on the lips, which were swollen, were a number of small vesicles. The soft palate and pharynx were now so swollen as almost to occlude the oropharynx. The oral mucous membrane was studded with greyish ulcers with red areolæ. Swelling of the eyes had increased, as had the injection of the conjunctivæ, and a profuse purulent exudate was present. The submaxillary glands were now prominent swellings below the mandible.

As œdema of the glottis was evident the need for tracheotomy was considered. In spite of the cardiac con-

dition intramuscular cortisone therapy, in full dosage, was now instituted, together with thiomerin. Aureomycin was discontinued. Within 24 hours definite improvement was obvious, the patient being again rational and taking fluids well. All inflammatory manifestations gradually abated and after five days cortisone was discontinued. The only residual signs were minimal involvement of the eyes and submaxillary glands. Five days later, however, there was a sudden relapse. Aureomycin was again given in doses of 3 gm. per day, but in spite of this her condition deteriorated and, after 15 days, her plight was as desperate as before. Accordingly, on November 5,

TABLE I.

SCHEDULE OF DOSAGE OF CORTISONE

Date	*Cortisone*	*Date*	*Cortisone*
November 5*	300 mgm.	November 10	75 mgm.
" 6	200 mgm.	" 12	50 mgm.
" 7	100 mgm.	" 14	50 mgm.
" 8	75 mgm.	" 16	50 mgm.
" 9*	75 mgm.	" 20	50 mgm.

*Plus 2 c.c. of thiomerin given subcutaneously.

cortisone administration was again started and maintained until November 20 when aureomycin too was discontinued (Table I). By this time she had made a rapid and complete recovery, except for slight conjunctivitis and blepharitis which ultimately responded in a few days to ophthalmic cortisone ointment.

This patient was kept under constant observation because of her cardiovascular-renal condition for a further period of five months and there was no evidence of further relapse or recurrence of this syndrome. She finally succumbed to a condition clinically resembling uræmia, April 18, 1954.

COMMENT

It is noteworthy that this patient was a senile and debilitated woman, suffering from a chronic long-standing neurological disorder, complicated by recent severe cardiac decompensation with failure. In addition she refused to enter hospital and had to be treated entirely at home, without benefit of the usual laboratory aids.

This is presented as a case of the oculo-mucous membrane syndrome, a variant of erythema multiforme exudativum described by Robinson,[9] in which there is a notable lack of cutaneous manifestations. The diagnostic features are oral, pharyngeal, and upper and lower respiratory tract involvement and fever, together with severe purulent conjunctivitis and blepharitis. An unusual and prominent feature was the presence of marked inflammation of the submaxillary salivary glands. A review of the previously reported cases failed to reveal such a finding. Although skin manifestations were completely absent in our case and, apart from urethritis, there were no symptoms referable to the genitalia, reference to Table II will show that this case is consistent with Robinson's classification of this vague entity.

It is quite apparent that this patient was *in extremis* and would have died of acute asphyxia in a matter or hours, even with full doses of penicillin and aureomycin. It was at this juncture that cortisone was given, and this appeared to be a life-saving measure. Cortisone was discontinued on the fifth day but after a further five days a sudden relapse, characteristic of this malady, occurred. This again did not respond to even large doses of aureomycin but was dramatically relieved by cortisone. As in other recorded cases in which the dangerous effects of the disease were controlled, minor residual—conjunctivitis and blepharitis—still remained a troublesome feature until cortisone ophthalmic ointment was used.

TABLE II.

DIAGNOSIS OF STEVENS-JOHNSON DISEASE

Original Criteria for Diagnosis ("Robinson")	
Generalized maculopapular eruption	
Purulent conjunctivitis with corneal ulceration	
Ulcero-membranous stomatitis	
Fever	
Symptoms added in subsequent reports	
Eye lesions	Mild conjunctivitis Panophthalmitis with destruction of bulb Keratoconjunctivitis sicca
Male genitals	Nonspecific urethritis Balanitis
Female genitals	Vaginal ulcers
Mucous membrane lesions: Oral	Vesicobullous eruption Pseudomembrane formation Extensive ulceration of the pharynx
Skin lesions	No skin lesions Vesicular or bullous eruption Erythema multiforme lesions
Joint signs	None reported
Miscellaneous	Afebrile course Œsophageal ulceration and hæmatemesis Pneumonia Tracheobronchial ulceration

DISCUSSION

This syndrome occurs in both sexes, but predominantly in males, and usually under the age of 50. In one series of 81 patients 69 were reported to be under 30 years of age.[12] Neverthe-

less, Fishman[13] treated an 85 year old woman with this disease.

Various hypotheses have been advanced to explain the etiological factor or factors such as allergic response to drugs (particularly to sulfonamides), bacterial infection, specific viruses and collagen disease, to name a few, Finland *et al.*[14] discovered significantly high titres of antibody for the psittacosis virus, demonstrated by complement fixation methods, in three fatal cases out of four in which pneumonia occurred. These observations have not been repeated by others. The etiology still remains obscure.

It has been stated that the Stevens-Johnson syndrome, like Reiter's disease, is a self-limited malady with a favourable prognosis and that most patients recover without any residual complications.[3] It should be recognized, however, that the symptoms may persist for months or years and that relapse is a hall-mark of the disease (Blair, quoted by Klauder,[5] reported a case in 1904 with five further attacks). Although recovery without complications is usual, permanent ocular defects, such as distortion of the eyelids, corneal opacities and blindness may occur. Goldfarb[15] tabulated data on 21 cases; of these patients eight were classified as blind.

The mortality rate is difficult to assess but nevertheless it is not inconsiderable for a disease which is generally recognized to be self-limited. Finland[14] cites from only five medical sources no less than 14 deaths. Complications involving the respiratory system seem to have accounted for most of these.

Treatment. – Most of the available modern remedies have been applied in this condition. Robinson states that "with the advent of aureomycin great strides have been made in the treatment of erythema multiforme exudativum and its various manifestations. A large number of patients who have been treated with this drug have made uneventful recoveries." Optimistic statements of this nature should be accepted with a certain amount of reserve for it is evident that the majority of patients recovered uneventfully before the antibiotic era, while others have shown a complete lack of response to adequate antibiotic therapy as in our case. Recent accounts indicate the pronounced therapeutic value of ACTH and cortisone. Apparently ACTH was first used by Yates (Landegger[16]). Subsequently other workers have reported marked success with ACTH and cortisone and have stressed the therapeutic value of these drugs in severe cases in which the antibiotics have failed (Caldwell.[17] Landegger,[16] Agostas,[18] and Wammock[19]). Desperate and unresponsive cases may yet occur; for example, Orme reports the death after six weeks of therapy of a five year old girl, who was treated with aureomycin, chloramphenicol, ACTH and cortisone.

SUMMARY

A case of the oculo-mucous-membrane syndrome in a 73 year old woman is recorded. This syndrome is a variant of erythema multiforme exudativum, but from general usage may be included under the term Stevens-Johnson syndrome. The disease generally runs a benign course but with a tendency towards relapse. Severe and permanent ocular defects or even death may ensue. ACTH and cortisone are considered to be valuable and even life-saving adjuvants to treatment. In the case reported, antibiotics alone were ineffectual.

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ALCOHOL IN CORONARY ATTACKS

Alcohol is a time-honoured remedy for "heart attacks." Vartiainen and his colleagues (*Ann. Med. Int. Fenn.*, **42**: 162, 1953) perfused the coronary vessels of the isolated rabbit heart with a variety of alcoholic beverages in Locke's solution. Although the vasodilator effect was comparatively slight, good-quality old brandy was found to have a much better action than pure ethyl alcohol or a crude distillate of wine.

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TUBERCULOSIS OF THE GREAT TROCHANTER

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THE LITERATURE on this subject is relatively scanty. The first comprehensive discussion is by Meyerding and Mroz (1933). They analysed 19 cases verified by examination. Of these nine were in females and 10 in males. The oldest patient was 65, the youngest 21. The average age was 35. The disease usually began in the late teens or early twenties. Occupation had no bearing on the condition. Five patients had a history of previous trauma, two had been exposed to tuberculosis at home and one had pulmonary tuberculosis.

The complaints on admission were of pain and draining sinuses. Eleven patients complained of pain in the hip region; six referred this pain to the front of the thigh and the knee. Pain was aggravated by sitting, standing, or walking (two cases); by wet weather (two cases); by lying on the affected hip (four cases). Three of the patients had swelling of the hip, and one each had osteomyelitis, sciatica, and stiffness of the hip as well as pain. The duration of the complaints averaged 11½ years. The longest time since onset was 40 years, the shortest five weeks. The commencement was always insidious. In 14 the right side was affected and in five the left side. All patients were ambulatory and appeared in good health. The only previous operation recorded was incision for drainage, one patient having undergone five such incisions. There was never heat or local redness.

Swelling when present was over or posterior to the great trochanter. Five out of 10 previously operated upon had discharging sinuses, the discharge being serous in character. The unbroken skin appeared normal. Movement at the hip-joint was for the most part complete. Weight-bearing was painless. Five patients had a slight limp, and some had pain on change of position. In two cases the temperature was slightly raised; in all others it was normal. The leucocyte count averaged 8,700, The Wassermann reaction was always negative. The lungs were affected in eight cases (42%). In four cases (21%) joints other than the hip were affected. In two cases (10%) the urinary tract was involved. In 15 cases, radiography revealed that the bone of the great trochanter was affected. In two other cases operation disclosed bone involvement although the radiograph was negative. In two cases, the bursa alone was diseased; excision of the bursa in these led to prompt healing. Where the bone was involved, healing was slower or sinuses formed. In 17 cases the focus was excised, in one it was aspirated, and in one curetted. Two of the cases showed "rice bodies."

From the discussion that followed, it was apparent that few of the orthopædic surgeons present had seen more than a few cases. Kidner spoke of having seen only three cases; these had been diagnosed as osteitis fibrosa cystica. Stone emphasized the presence of tuberculous disease elsewhere and felt that trauma was an important factor. Steindler stated that from his clinic in Iowa, Milgram had collected 20 or 21 cases. Adams said that he was accustomed to excise the bursa. He added further, "These cases have a way of recurring in the bony trochanter several years later. Disease has slowly spread up the neck and involved the hip-joint."

Before the presentation by Meyerding and Mroz, Clopton (1919) had described three cases, Peabody (1921) three cases, Swindt (1921) one case, and Donovan and Sosman (1942) five cases. McMurray (1947) reported on 12 cases collected over 15 years. He stated that the total number of cases recorded is only 41, and estimated the incidence as two per 1,000 of all cases of bone and joint tuberculosis. Three of his patients had had severe trauma. Five had tuberculosis elsewhere (lungs, lymph nodes of neck, retropharyngeal abscess, knee, sacro-iliac joint). Six of the twelve had sinuses. Five patients had negative radiological findings, and these were the only patients who had not developed sinuses. McMurray formed the opinion that bone erosion was secondary to bursa infection. The treatment adopted was variable: Drainage was undertaken in three cases, with sinus formation in all. Repeated aspiration was combined with rest in bed in three cases; in all, sinuses formed within a year, these sinuses being excised later. Incision and curettage was carried out in five cases; one of these developed a persistent sinus. Excision of bursa and bone was performed in seven cases. One healed *per primam;* all healed within seven months.

CASES AMONG INDIANS

In view of the estimated case incidence of two per 1,000, it may be of interest to report on the

findings at Brandon Sanatorium. From the opening of this institution in June 1947 until July 1951, 82 cases of bone and joint tuberculosis were admitted. Of these six were examples of trochanteric tuberculosis; this gives an incidence of 7%. This figure cannot be regarded as typical of the state of affairs among the Indian population, but it is unusual enough to suggest further study. Of the six cases, five were in males and one in a female, the latter an Eskimo from Southampton Island. The youngest was 10, and the oldest was 43. Occupation was not a contributory factor. One out of the six gave a history of previous trauma. In 1943 some logs fell on his right hip and thigh, producing an open sore which did not heal for 18 months and which had broken down again. Infection may well have preceded the accident. Rather striking in the series was the interval between onset and admission to hospital. In four cases it was 29 years, 13 years, 10 years and seven years respectively. In the case of the Eskimo girl information was not available on account of language difficulty; in the case of the lad of 10, the swelling was noticed nine months before admission, and the "abscess" had been incised three months before he arrived in hospital.

Though no definite information was obtained regarding contact with tuberculous subjects, it is highly probable that most of the subjects had been exposed to infection. Tuberculosis elsewhere in the body was noted in five of the six cases. In four of these the lungs showed evidence of infection; in one patient (aged 10) the infection was moderately severe, in the others mild or arrested. Skin, lymph nodes and genito-urinary system were not obviously affected in any. Two patients had disease of the spine, spontaneously arrested, and two a focus in the ischium.

Pain was notably absent; only one patient complained of soreness. One had a limp with some restriction of movement at the hip-joint. In this case, there was a tuberculous focus in the ischium. Two showed swelling in the neighbourhood of the great trochanter, and five had one, two or three sinuses. The general health of all was good except in the case of the boy with active lung infection. In none of the others was there any debility or wasting; the temperature was never elevated more than a degree or so above normal. The erythrocyte sedimentation rate (Westergren) was generally raised, the average being 50, the lowest 18, and highest 92. In all cases the Wassermann reaction was negative.

Radiological findings were almost uniform, including erosion of the lateral surface of the great trochanter, and in most cases irregularity of the bone structure. Differential diagnosis would not seem to be difficult. There does not appear to be grave risk of extension to the hip-joint, but the pathological sequence is not entirely clear. It is usually assumed that the primary lesion is in bone, and is an epiphysitis or metaphysitis. According to this view, the bursa underlying the gluteus maximus is involved secondarily. In one of our cases, the "pus"-containing cavity extended from the outer aspect of the great trochanter almost as low as the knee joint. In another case, of which the operative record is given below, the gluteal bursa did not seem to be involved. In only one of our cases was a definite sequestrum found although cavitation of the bone was observed in three cases. The question "Which comes first?" the bursal or the bone lesion would appear to be of academic interest only; it may be safely assumed that both require attention in every case.

Treatment involved open operation in five cases. The wound in the lad of 10 healed completely without the use of streptomycin or other medication. A typical operative record is as follows,

> "Fascia lata was incised. Yellowish material was seen to be bulging through the attachment of the gluteus medius to outer side of great trochanter. Gluteus medius was cut free from its attachment and immediately a mass looking like a bursa with thickened walls was disclosed. It was possible to dissect all round this and remove it as one mass. It communicated with a small cavity in the trochanter. A small white sequestrum was found lying in the mouth of this cavity. The cavity itself was thoroughly curetted. The wound was sutured without drainage. No plaster."

After-treatment.—One patient had a plaster spica applied. The other wounds were sutured with or without 24-hour drainage, and all healed *per primam.* All had penicillin for 48 hours, and streptomycin 0.5 gm. daily for about six weeks. Subsequent history shows that in one case, the only one treated with a spica, the wound broke down again after five months, but healed again within two months. In a second case about 60 c.c. of straw-coloured fluid was aspirated from a swelling 48 days after operation. Culture of this fluid showed no tubercle bacilli and the wound did not break down. In four of the cases histological examination of the tissue removed confirmed the diagnosis of tuberculosis. One patient

did not undergo operation, and in another case the tissue was unfortunately not submitted to examination.

As a result of the unusual experience related above, it was decided to make enquiries from all the Indian hospitals of Western Canada. This was carried out by Dr. W. J. Wood, and replies were received from the superintendents of the Indian hospitals at Fort William and Moose Factory in Ontario, Prince Albert in Saskatchewan, Edmonton in Alberta, and Sardis, Nanaimo, and Prince Rupert in British Columbia. Only one case of trochanteric tuberculosis was discovered. That was at Edmonton. The report was as follows:

"We have only one case in our records of tuberculosis of the great trochanter and she is in the hospital at present for treatment. She is C.M. age 17, an Indian girl from Fort Wrigley. She was admitted here June 19, 1951, with Pott's disease of lumbar 3rd and 4th and also complained of pain over the right great trochanter. Pus was aspirated from the subgluteal bursa which was positive for acid-fast bacilli on culture and guinea-pig test. X-ray revealed slight erosion of tip of trochanter but hip-joint itself revealed no bony change.

We have between 60 and 70 patients here with bone and joint tuberculosis and a total of 440 with tuberculosis of some form or other. There are another approximate 300 under treatment in the Mission Hospitals of the North West Territories, but we do not know of any of the latter patients that have tuberculosis of the great trochanter."

CASES AMONG NON-INDIANS

The discovery of no fewer than six cases of tuberculosis of the great trochanter within the space of a few months and within a single sanatorium naturally prompted an enquiry as to the frequency of this condition among non-Indians. Requests for information were directed to Manitoba Sanatorium at Ninette, to St. Boniface Hospital and Sanatorium and to Winnipeg General Hospital. Private records were also searched. Summaries of seven cases are appended.

1. F.A., 19, nurse in training. Admitted with a swelling over the right great trochanter. Radiographs showed a cystic process in the right great trochanter. On April 18, 1929, the area was opened up, the cyst curetted and tissue sent for examination. Tuberculous tissue was not found. The record is incomplete, and this case is presumptive only.

2. Mrs. W.K.C., 40, housewife. On October 21, 1939 the left great trochanter was opened up after excising a bursa about the size of a crabapple, partially broken down in the centre. The tissue was examined microscopically and reported as tuberculous. On January 29, 1946 swelling and tenderness had re-appeared, and the part was again explored. Tissue report: "probably tuberculous". Seen in August 1951; no return of trouble.

3. Mrs. R.H., 27, housewife. Admitted in 1949 with a discharging sinus on the left thigh. Penicillin was prescribed, and the patient carried on until May 1951 when, the sinus having persisted, the track was excised and the greater trochanter was curetted. A culture positive for tubercle bacilli was obtained after four weeks' incubation of material from the sinus.

4. J.D., 64, labourer, Galician. In November 1948, complained of pain in the right leg of about eight years' duration. Radiography showed an area of destruction in the right great trochanter, presumably tuberculous. Treatment was refused. In November 1949 he was admitted to hospital. Over the right buttock there was a broken-down area, red, indurated, and moist. A similar area overlay the right side of the scrotum. Radiographs revealed practically no change in the condition of the

TABLE I.

ANALYSIS OF BRANDON CASES

Name	*A.W.*	*F.H.*	*E.R.*	*N.*	*C.S.*	*F.C.*
Age	26	43	10	18	35	37
Occupation	Trapper	Labourer	School	Nomad	?	Labourer
Race	Indian	Indian	Indian	Eskimo	Indian	Indian
Age at onset	13	33	10	?	6	30
Trauma	No	No	No	No	No	Yes
Exposure to T.B.	Yes	?	?	Probable	?	?
T.B. elsewhere: Bone	—	Spine, pelvis	—	Ischium	—	Spine
Skin	—	—	—	—	—	—
Lymph nodes	—	—	—	—	—	—
Gen. Ur.	—	—	—	—	—	—
Lungs	—	+	+	+	+	—
Pain	Soreness	—	—	Limp	—	—
Swelling	—	+	—	+	—	—
Sinuses	1	1	3	—	2	1
General health	Good	Good	Poor	Good	Good	Good
Previous operations	—	—	Incision	—	—	—
Temperature	N+	100°	N+	N	N	N
Sed. rate	53	85	36	92	19	18
Wassermann reaction	—	—	—	—	—	—
Date of admission	4-2-48	14-3-49	13-9-49	21-10-49	16-9-50	20-12-50
Date of operation	14-1-49	29-4-49	—	13-10-50	3-11-50	9-3-51
Nature of operation	Excise	Excise	—	Excise. Seq.	Excise	Excise
Supportive treatment	Spica. P.S.	P., S.	S.	P., S.	P., S.	P., S.
Laboratory finding	T.B.	T.B.	No Spec.	T.B.	T.B.	Not Ex'd.
Result	1 breakdown	Healed	Healed	P.O., Aspir'd.	Healed	Healed

right trochanter, but the left hip-joint showed marked disintegration. No operative treatment.

5. Miss E.S. In 1945 a "tuberculous bursitis" over the left great trochanter was diagnosed and treated by aspiration. Tubercle bacilli were not found in the "pus". In 1949, she was admitted to sanatorium with far advanced bilateral pulmonary tuberculosis. The bursa continued to give trouble and was aspirated on numerous occasions. Tubercle bacilli have been isolated from the fluid by culture and guinea-pig inoculation. Sputum is now negative and excision is contemplated.

6. Mrs. N.W., 69, housewife, had had a painful, swollen hip since November 1950. She was admitted to hospital in March 1951. Over the left thigh there was a diffuse swelling with a sinus. Tubercle bacilli were cultured from the sinus. In October 1951, the sinus was excised and the greater part of the trochanter removed.

7. Mrs. F.C., 59, housewife, complained in July 1949 of pain, swelling, and limitation of movement of the left hip. Exploration showed a cyst filled with cheesy material. Microscopic examination was negative for tuberculosis. In November 1952, re-exploration furnished a diagnosis of tuberculosis confirmed by culture and guinea-pig inoculation. In January, the great trochanter was resected.

CONCLUSIONS

1. Tuberculosis of the great trochanter is a relatively uncommon condition. It tends to be chronic, existing for months or years before being recognized or treated.

2. Pain is not a prominent symptom; the general condition of the patient may remain comparatively satisfactory.

3. Any lesion affecting the cortex of the great trochanter should be presumed to be tuberculous even in the absence of confirmation by microscopic examination of tissue, culture of "pus", or guinea-pig inoculation.

4. Incomplete removal or conservative treatment is apt to be followed by recrudescence of symptoms.

5. Complete excision of the area involved, including thorough treatment of the bone lesion, usually leads to recovery.

6. Antibiotics such as streptomycin may be of benefit.

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HISTIOCYTIC RETICULOSIS AND HONEYCOMB LUNGS*

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A GENERALIZED EXPANSION of the reticulo-endothelial system is only commonly encountered in this country in certain neoplastic conditions such as Hodgkin's disease, lymphosarcoma, and allied conditions. It may also occur as a reaction to infection, as in histoplasmosis, but examples are rarely encountered, and in recent years we have encountered it only as a complication of cortisone therapy, with generalized invasion of blood and lymphatics by saprophytes. The rare lipoid storage diseases also yield examples of generalized expansion of the system. There is a fourth group of diseases in which there is generalized enlargement of the reticulo-endothelial system. The etiology is unknown, the reacting cell is the histiocyte, the morphology is outside the accepted canon of neoplasia, and no special metabolic disorder has been identified. Histiocytic reticulosis is a convenient term for the group as it embraces the characteristic reacting cell and the implication of progressive and widespread involvement of the reticulo-endothelial system. The group has previously been described under a variety of names – non-lipoid histiocytosis, reticulo-endotheliosis, histiocytic medullary reticulosis of Robb-Smith, eosinophilic granuloma of bone with various complications, xanthomatosis, eosinophilic xanthomatous granuloma of Thannhauser.

The group, histiocytic reticulosis, embraces three syndromes which are believed to represent clinical variations of one basic lesion. The three syndromes are Hand-Schüller-Christian disease, Letterer-Siwe's disease, and eosinophilic granuloma of bone. Not only are these diseases of unknown etiology which share the same basic lesion, but also cases occur which clinically lie intermediate between them.[1 to 4] Indeed, in our experience, cases, on the one hand, either fall short of or show considerable variation from the accepted classical syndrome, or, on the other hand, the majority lie intermediate between the classical syndromes.

Hand-Schüller-Christian disease is a rare but well known condition. It is characterized by a

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progressive proliferation of histiocytes in the reticulo-endothelial system so that there is enlargement of lymph nodes, and sometimes of spleen and liver; the replacement of marrow by histiocytes produces anæmia. The marrow expansion is locally excessive with expansion and rarefaction of bone. Progressive proliferation and histiocytic differentiation may also take place in tissues with a more potential than obvious reticular system, such as the skin and lungs. Similar lesions also occur in the dura; in the region of the sella turcica, these lead to diabetes insipidus; involvement of orbital bones with exophthalmos completes the classical picture. The condition was once held to be a primary disorder of cholesterol metabolism, and histiocytic proliferation was regarded as a reactive storage mechanism. The cholesterol content of grossly affected organs may not, however, be elevated and the morbid process is considered to be a progressive proliferation of histiocytes of unknown etiology. The cumbersome term non-lipoid histiocytic reticulosis[5] has been increasingly applied to cases in adults showing many of the features of this classical syndrome, which was originally recognized as a disease of the young. Enlargement of the liver and spleen has generally been more conspicuous than in the young.

In Letterer-Siwe's disease the process is acute and rapidly fatal with progressive anæmia, toxæmia and purpura. Liver, spleen, lymph nodes and marrow show the characteristic morbid process. Gross oro-pharyngeal ulceration is usually a feature. The condition is encountered in infancy and childhood, and the classical picture emphasizes lytic bone lesions. In the cases which we have encountered, though there has eventually been diffuse marrow involvement, conspicuous bone lesions were not a feature. In one case toxæmia and massive enlargement of lymph nodes were the presenting clinical features.[6]

Eosinophilic granuloma of bone presents as an expanding and rarefying, usually painful, focal disease of bone which classically is self-limiting in its natural history. While eosinophilic leucocytes, sometimes in great number, are encountered in the predominantly histiocytic lesion, they are not invariable and are regarded as secondary invaders. Lesions may be single or multiple; the association, in a child or a youth, of a single lesion in the shaft of a long bone and multiple lesions of the skull is not uncommon. Eosinophilic granuloma has taken its place in the group with the other two syndromes, because some cases with identical features are progressive and involve extra-skeletal elements of the reticulo-endothelial system to constitute the majority of intermediate cases within the group.

Except for eosinophilic granuloma of bone, variants of the three classical syndromes are commoner than the parent types. No doubt reflecting increasing recognition of the disease, in 1952 we encountered six examples, only one of which was an uncomplicated eosinophilic granuloma of bone while the remainder showed considerable variation from the classical types. Again in the case of eosinophilic granuloma there is always the implication that further skeletal and extra-skeletal lesions may later develop. Sometimes in cases of diabetes insipidus the only lesion identified is a suprasellar granuloma which exhibits the morphological process common to the group. Like solitary eosinophilic granuloma of bone it is convenient to regard this lesion as a localized variant of the process, though Sheehan and Summers[7] in their comprehensive review of destructive lesions about the sella turcica do not mention this viewpoint. Recently we have encountered a peripheral blood picture of aplastic anæmia in a young adult associated with hepatosplenomegaly and gross marrow replacement where the histology was typical of the group. Though rare, this variant is already known but obscured in the literature of aleukæmic monocytic leukæmia.

MORBID ANATOMY

Histiocytic proliferation. — It is a curious feature that, even in widespread and rapidly fatal examples of the condition, the histiocytes are all well differentiated and confined to the reticulo-endothelial system and mitotic figures may be extremely scanty. In the presence of hæmorrhage, associated with complicating purpura, the histiocytes show unabated powers of erythrophagocytosis so that histiocytes laden with red cells may be the conspicuous microscopic feature and the affected organs are swollen and plum-coloured. This morphological and functional differentiation of the reacting cells is the keystone of the pathological picture, contrasting with neoplastic conditions in which anaplasia and defective function are the rule in the reacting cell. *Fibrosis.* Disappearance of the reacting cells and progressive fibrosis are features of

chronic lesions. *Necrosis* is encountered in chronic lesions, particularly in bone and in the spleen. It is probably secondary to fibrosis with resulting ischæmia. In chronic bone lesions there may be surrounding bony overgrowth. *Regression.* While, apart from eosinophilic granuloma of bone, all examples of the group so far identified are progressive, striking regression of bone and lymph node lesions and of the clinical course of diabetes insipidus has been recognized in disseminated cases.

In the liver, in acute and subacute cases, the sinusoids may be seen to be stuffed with nucleated cells to a more marked degree than that commonly encountered in chronic myeloid leukæmia. The cells can be seen to originate from the sinusoidal lining and many appear to lie free, yet there is not a leukæmia. Either the appearance of free cells is an artefact or the cells are filtered in the lungs into the lymphatic system. Chronic lesions in bone, lymph nodes and spleen superficially resemble, and may be mistaken for, Hodgkin's disease. Although the mature character of the histiocytes in the group is to be emphasized, in Letterer-Siwe's disease in infants the picture is sometimes complicated by the presence of precursors of the histiocyte, producing a picture which may be difficult or impossible to distinguish from neoplastic conditions of the lympho-reticular system. Equally, however, some of the acute cases in children show well differentiated cells.

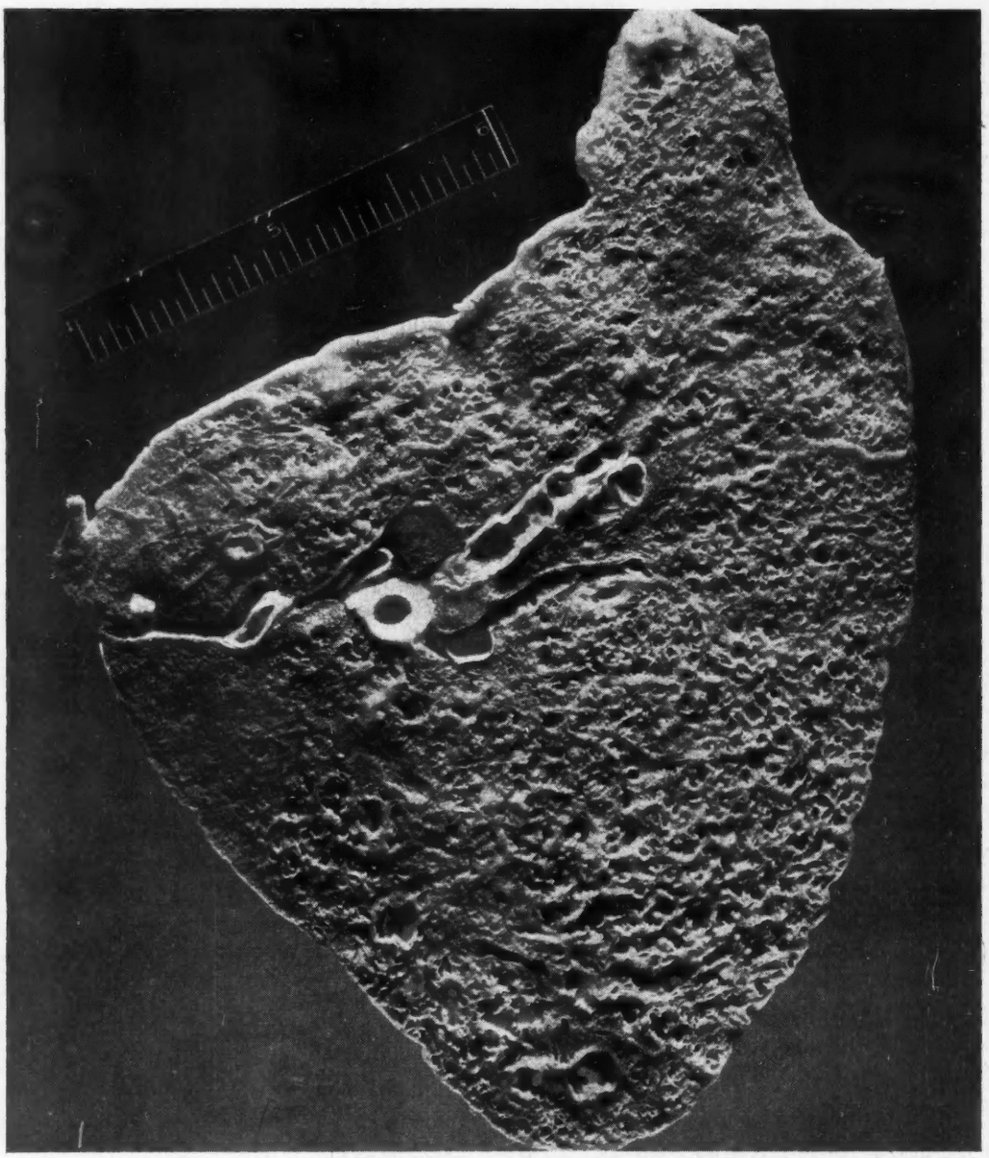

Fig. 1.—Honeycomb lungs.

HONEYCOMB LUNGS

Oswald and Parkinson[8] have reviewed the condition of honeycomb lungs. They define it as a "single variety of cystic disease in which there are thin-walled cysts distributed uniformly throughout the substance of both lungs, varying in size up to a maximum of 1 centimetre in diameter". Honeycomb lungs have been found in association with hepatic disorders of infancy, in tuberous sclerosis, as an isolated manifestation of unknown etiology, and, by far most frequently, in histiocytic reticulosis. Not uncommonly the only other manifestation of histiocytic reticulosis has been diabetes insipidus. The lungs have the feel of a sponge and, on squeezing, a milky (chylous) fluid is expressed. Photography with strong oblique lighting brings out the texture to advantage (Fig. 1). The process involves a generalized expansion of the lympho-reticular apparatus of the lungs with progressive histiocytic differentiation and subsequent fibrosis and lymphœdema. The fibrosis is coarse around the anatomical lobules. With fibrosis spreading from the lymph centres, atrophy of some air sacs and a general coarse emphysema the sponge-like condition develops. As Parkinson[9] describes, there is radiologically a generalized reticulation associated with miliary mottling throughout the lung field and the reticulation forms small annular shadows (Fig. 2). The natural history of histiocytic reticulosis implies that the cellular stage can wax and wane and even resolve. The not infrequent use of the terms "thin walled" or "air" cysts is unfortunate as the honeycomb appearance is an ultimate configuration produced by an interstitial histiocytic proliferation and fibrosis, the peculiar character of which is determined by the localization of the lympho-reticular system of the lungs.

The terms Letterer-Siwe's disease, Hand-Schüller-Christian disease, and eosinophilic granuloma of bone are condoned by time and usage. Except for the latter condition, as we have already stated, cases of the group rarely fall into the classical syndromes and can generally be described only as cases of histiocytic reticulosis. Since the ultimate diagnosis is made by biopsy and since a confusing terminology has been used in the past, it can be well understood that the clinician will often fail to connect a tissue diagnosis of histiocytic reticulosis (or eosinophilic granuloma) with the clinical findings, or fail to appreciate the many possible developments which may arise in the future course.

We consider that it is of advantage to remember the following points. (1) As regards possibilities of organ involvement, the classical picture of Hand-Schüller-Christian disease should be taken as representing the disease in its widest development. (2) All possible combinations of organ involvement may be encountered, as for example honeycomb lungs and diabetes insipidus, honeycomb lungs and solitary bone lesions, hepatosplenomegaly and anæmia. It is probable that honeycomb lungs, unassociated with other manifestations of disease, are examples of isolated

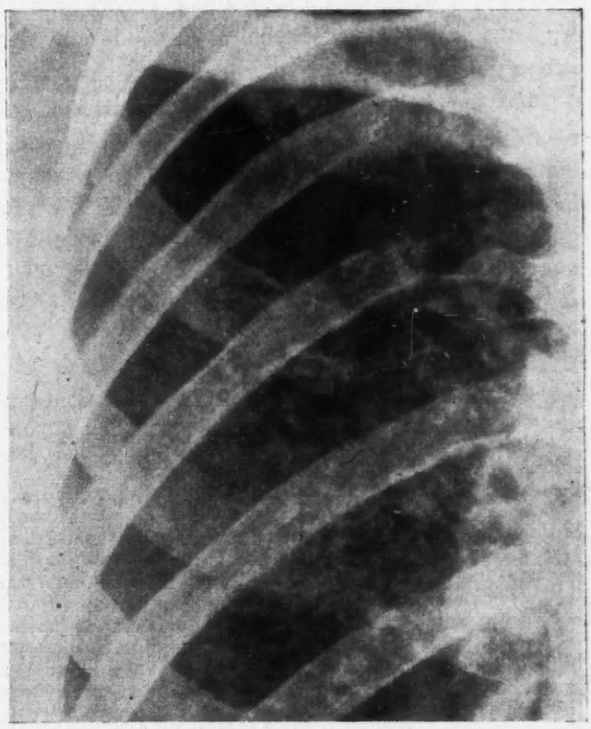

Fig. 2.—Honeycomb lungs.

histiocytic reticulosis, just as certain isolated suprasellar granulomas associated with diabetes insipidus are to be viewed in this light. (3) Though usually progressive when multiple organs are involved, lesions can be transient or relatively stationary and widely spaced as to time intervals of involvement. As will be recognized in the case to be described a check of problem cases of pulmonary fibrosis may yield clues placing them in this group. (4) The unitarian concept of the group is based on a uniformly well-differentiated proliferation of histiocytes. As such in the accessible tissues, e.g., a lymph node, the lesion may be difficult to distinguish from a chronic abscess. When such a diagnosis does

not agree with a protean clinical picture the pathologist should be given a full history. (5) Within the ambit of Hand-Schüller-Christian disease the condition is involved in obscure lesions of bone and skin; the differential diagnosis of hepatosplenomegaly and lymphadenopathy; the definition of causes of pulmonary fibrosis and diabetes insipidus; and the investigation of chronic severe anæmia. More particularly, the acute variant in children, Letterer-Siwe's disease, comes into the differential diagnosis of severe anæmia and toxæmia, especially when associated with oral ulceration. Thus, while admittedly rare, the protean nature of its manifestations demands a working knowledge of the condition by consultants in many fields of medicine and surgery.

The variation within the above terms of reference is well exemplified by the following clinical case in which biopsy of a solitary lesion in the skull revealed that a long-standing and apparently static pulmonary fibrosis was due to histiocytic reticulosis.

Clinical Case

The patient, a young woman now aged 37, had a healthy childhood apart from a curious history of having had measles three times.

Pulmonary fibrosis.—Eight years before she had consulted her family doctor because of increasing breathlessness over the previous two years. She had described her breathlessness as permitting her to dance a slow foxtrot but not a quickstep. She was investigated at a sanatorium. Her tuberculin test was negative, she had no sputum and tubercle bacilli were never found. The patient was well nourished and looked healthy. There was no clinical enlargement of the liver, spleen or lymph nodes. Radiological examination revealed a heavy mottling throughout both lung fields. The mottling frayed out into a reticular arrangement with a distinct honeycomb pattern. Only the negative tuberculin reaction supported the view that the pulmonary fibrosis was due to sarcoidosis, which was taken as the tentative diagnosis. The patient was sent home and advised to avoid over-exertion and to take a two hour rest daily. She followed this advice and apart from limitations on exertion led a normal life. The liability to breathlessness had remained the same ever since.

Transient lymphadenopathy.—For the last two years she had had swellings, sometimes tender, on both sides of the neck and above the clavicles. These were identified as large lymph nodes by her family doctor and one mass was recorded as measuring 4 x 3 cm. The glands would take about three weeks to come up, remain for a similar time, and gradually disappear in about the same period. For months she would be quite free of the complaint. The lymph nodes were hard and, when large, tender on pressure and on moving the neck. They were naturally considered to substantiate a diagnosis of sarcoidosis.

Lesion of skull.—Finally, for six weeks before admission to hospital, she experienced severe frontal and right-sided headaches, which came on suddenly and became more frequent until they were constant. Over this time she had also noticed a lump on her head which was increasing in size. She entered hospital for investigation. Apart from breathlessness on exertion similar to that present for the last 10 years and her headaches, she had no other complaints and appeared well nourished and healthy. Radiological examination of the lungs showed a reticular fibrosis throughout both lung fields with only a suggestion of honeycomb. The density and honeycomb definition was much less marked than eight years ago. At first after admission she had conspicuous bilateral enlargement of cervical lymph nodes but this disappeared completely within four weeks. In addition to the transient lymphadenopathy the only point in favour of sarcoidosis as an explanation of the pulmonary lesion was a negative tuberculin reaction. In particular there was no clinical enlargement of liver or spleen, and the blood picture, sedimentation rate and plasma protein values were normal. A survey of bones, including the phalanges, revealed no abnormality additional to the skull lesion. The lump on the head was found to be a firm subcutaneous nodule, near the centre of the crown, 2 cm. in diameter, and fixed to the deep structures. She claimed that her headaches increased on pressure. X-ray examination revealed a small rarefaction of the bone underlying the lesion but with no surrounding sclerosis.

Eosinophilic granuloma.— The skull lesion was explored by Dr. William Stevenson who found a firm white tumour, 2 cm. in diameter, which involved the whole thickness of the calvarium and was attached to the underlying dura. Examination of the nodule revealed the classical picture of eosinophilic granuloma. The centre was composed of uniform, well differentiated histiocytes, broken into clumps by fine fibrillæ, and obscured in places by an infiltration of eosinophil leucocytes. At the periphery the cellular lesion gradually merged with dense fibrous tissue containing scanty lymphocytes.

Comment

The condition of honeycomb lungs is not widely known and as an isolated condition is liable to be confused with sarcoidosis. In this case the radiologist (Dr. P. Loder) included "xanthomatosis" at the end of a list of conditions which might account for the pulmonary fibrosis as encountered on the most recent examination. This is one of the many equivalent terms for histiocytic reticulosis. As such one might expect hepatosplenomegaly, lymphadenopathy, bone lesions especially in the skull, disorders of the blood, and perhaps diabetes insipidus. Though the interval was long (10 years) the patient did develop lymphadenopathy and finally a lesion of the skull with the characteristic histology. There can be no doubt that the case is one of histiocytic reticulosis.

The case presents unusual features. The chronicity is by no means unique but the possibility of long standing and stationary pulmonary disease in this condition is not generally appreciated. Furthermore, while bone lesions may permanently regress and lymph node lesions temporarily regress, the recurrent lymphadenopathy, sometimes gross and disappearing at times without a trace, is unique in the literature. Without the biopsy of the skull lesion the diagnosis would have remained obscure.

SUMMARY

A case of honeycomb lungs observed eight years ago in a young woman regressed eventually to a static reticular fibrosis causing breathlessness on exertion but allowing reasonable activity in an otherwise healthy person. Over the last three years there was transient, sometimes gross, cervical lymphadenopathy, which at present has regressed without a trace. A recent complaint of severe headache was associated with the development of a lump on the skull which was identified as an eosinophilic granuloma. It is shown that the whole clinical picture fits into the group of histiocytic reticulosis. Attention is directed to the protean nature of this group of conditions, to the wide range of differential diagnosis into which they enter, and to the great variation in natural history.

The illustrations of honeycomb lungs were prepared by the Crime Detection Laboratory, R.C.M.P., Regina, and are from a case under one of us, which was published by Dr. Linn.[5]

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THE SPOKEN PAPER*

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THIS PAPER is the result of painful experience. Over a period of years I sat through many medical meetings in a stupefied daze, until I took to asking myself what was wrong? Was it I or the papers? The subject was often interesting and the speakers often distinguished, yet somehow my attention was rarely gripped, and as my errant eye wandered round the room I noticed that many others were as restless as I, or else half asleep. So I have written this, conscious that in doing so I risk being as great a bore as those whose efforts stimulated me to write this paper.

THE SPOKEN WORD

There are two sorts of scientific papers; those which are written primarily for reading in a journal, and those which are intended to be spoken at a meeting. Unfortunately this necessary distinction is seldom made and in consequence we suffer much avoidable tedium. There have been several useful articles such as Burch's[1] on the general principles of writing papers, but none that I have seen makes any distinction between the spoken word and the read word. Papers of either sort have only one purpose—to tell the reader or listener something useful or interesting. However, since the written and the spoken word are different methods of communication, it is very unwise to use one in place of the other. Reflect how very different a novel is from a stage play and you will see my point. There are, however, some general rules which apply to both. Wherever you can, use the common tongue, but avoid the commonplace. Make your sentences short and pungent; complicated clauses weary both reader and listener, but the reader can scan back and puzzle out your meaning while the listener just loses the thread. Never give long and detailed case histories unless you have talent for discovering and describing the unusual; or, what is even rarer and only to be found in literary artists, a capacity for making the ordinary strange and fascinating.

THE ORATION AND THE COMMUNICATION

Whenever we try to tell anyone anything we use, in some degree at least, oratory, if we are to get it across properly. For convenience, I shall divide spoken papers into orations and communications, realizing that there cannot always be a hard and fast line between them.

An oration is a statement, usually made by a noted authority who surveys a field in which his pre-eminence is recognized. It may be called a lecture, dissertation or oration and it is not necessarily expected to form a basis for discussion. In presentation it should conform to the fashion of the age, for only great orators can defy convention with impunity. Lincoln's speech at Gettysburg is a famous example of the unconventional

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oration. By its gemlike, compact brilliance and good sense it shone out against the windy verbiage of his northern contemporaries. Their vaporings, which lasted several hours, were forgotten as soon as they were spoken. Those two minutes for which Lincoln spoke became immortal.

Our present convention is that oratory should seem simple, unstudied, friendly and informal. It means much sweat and trouble for most people to prepare such a speech. It is easy to be vague, wordy and platitudinous, but hard to be pointed, brief and original. If, as in past ages, we had formal rules for orations, it would be simpler for those who compose them, but we have none and so we must do the best we can without these guideposts. A successful stage play is much easier to write than a great oration, because the oration has all the difficulties of monologue combined with the danger of obscurity and inelegance due the ease with which one can lapse into technical jargon.

It should not be necessary to emphasize that it is execrable taste to read chapters from a textbook at a public meeting. It is necessary because I have heard several such read in lieu of a proper paper. No medical textbook that I have ever seen is suitable for public reading, and even if one were, how many medical men are practised in this art which is so difficult that it has only been mastered by a small number of highly skilled actors such as Mr. Charles Laughton and Mr. Emlyn Williams? But even these very experienced men exercise great care in what they select for public reading. No one has, so far as I know, ever chosen a medical textbook for this purpose. If you have no time to prepare a paper, either read one which you have delivered elsewhere or excuse yourself. It is much more pleasant to hear a good programme for the second time than to be bored by bits of a textbook. There are enough bad papers already without adding another.

The communication is less difficult because it need not be complete in itself but is intended as a basis for discussion. Nevertheless it is not without its snares. One of these is trying to cram so much into a short time that the hearers are stunned with facts. The gravest fault is to use up all the time in talking so that there is no time for discussion and you don't discover what others think about it. Nervousness often results in unrehearsed divagations from the script which, although they may relieve the speaker's tension, bore the listener. Only very experienced radio commentators speak without script or rehearsal and doctors who don't speak for their living would do well to remember this.

It is not beyond anyone to say what he has to say in brief, simple, direct language and then sit down. To do so, however, requires much preliminary work on the script combined with the self discipline and resolution to stick to it when the time comes. The man who possesses such resolution will quickly become a welcome speaker at medical meetings.

THE NEED FOR PLANNING

As you reach the rostrum, fumble with your notes, adjust the microphone, if there is one, and make those coughs or gulps which few of us can control before a public ordeal. The days or weeks that you have put into planning your paper will be reflected in the effect of your first few sentences. Have you thought that your paper may be fourth in a crowded morning session? Or have you taken it for granted that the audience is just as interested in your favourite quirk as you are? Papers should be written on the assumption that the gathering is tired, bored and hungry, and clearly the antidotes for these pandemics of medical conferences are clarity, wit and brevity, above all brevity.

THE FIRST STEP

The first step is to find a suitable subject for the audience whom you have been asked to address. Obvious as this may seem, it receives much less attention than it deserves. Ask yourself before you start, "Why should anyone want to hear this?" If you can't find at least one reason which still seems good 24 hours later, put your pen away. Medical meetings and learned journals are filled to the brim with repetitious outpourings of no special merit; why add to them? However, suppose that you are an expert in some unusual technique or have made some acute observation which has not been noted before. You run the danger of patronizing or boring your audience. If you are to avoid this you must early on fire their imagination and secure their sympathy; in short you must enchant them.

Once you are sure that you have something to say you should draw up a plan of campaign. Few things are better for this than the back of an old envelope which, split in half, gives ample

space for the skeleton of one paper. This skeleton is made of your main headings and shows the emphasis which you wish to lay on the material you have collected. Your case or other notes prepared, your books of references on hand and your inspiration running freely, you are now ready to write, and just how you do this must depend on you.

My own habit is to write a few pages at a time and revise what I have written when I am composing subsequent paragraphs. I rarely write sequentially and often am struggling with the closing section before the introduction. There is something encouraging in doing this because you feel that however disordered it looks, at least it has an ending. I don't commend this lack of orderly procedure, but for me the wind of inspiration bloweth where it listeth. However, your first task, even if they are the last words to go down on paper, is to introduce yourself and your subject. If you are eminent and your subject is well known this may seem unnecessary because someone else will do it for you. This absurd error is made regularly by well known men. Whoever you are, it is important that your first sentences rouse those who are taking a short nap at the back of the hall and halt those who are about to sneak out for a breath of air. You should, by your words and manner, hint at something savoury to come, without however, telling everything. Summaries come at the end and not at the beginning. You may consider that there is something hucksterish about such tricks, but men are not less curious because they are scientists and it is wise to gratify this human weakness.

REFERENCES, TABLES AND DIAGRAMS

In papers written for reading rather than speaking, it is customary to indicate one's indebtedness to various authorities and to show one's findings in a diagrammatic or tabular form. These devices, when carefully prepared and skilfully used, often help the reader, especially if the writer is obscure or halting, but unhappily the convention has been carried into the spoken paper with results that are usually dismal. When speaking, references should be as few as possible because strings of names, most of which will be unfamiliar, destroy continuity and distract the listener. If you know that some well known man is present in your audience, whose work is meritorious, it is courteous to recognize this by mentioning his name. Gestures of this sort can easily degenerate into displays of mutual backscratching, but kept within limits they introduce a personal touch which warms the audience

I expect many of you have sat through performances in which a higgledy-piggledy of figures are thrown on a poorly hung screen while the speaker brandishes a huge pole and jabs wildly from column to column. This is distressing enough, but often the speaker continues to speak while his back is turned, so that the explanation, which might elucidate the figures, is lost. Whereever possible, eschew tables, diagrams and slides. If these are necessary to explain your words, it may mean that your paper is not suitable for speaking. If you can't make your meaning clear without them then plan them carefully and have them very sharply reproduced. Before you give your paper, look at them several times on a screen so that they are thoroughly familiar to you both from the speaker's rostrum, and from the seats at the back of the hall. You may find that your diagram is quite incomprehensible to anyone except those in the front row. If this is so, scrap it.

After your introduction it is convenient, and in a spoken paper almost essential, to divide the paper with various headings. The virtue of this is that since it is tiring to deliver a speech, you may wish to pause for breath or a sip of water. It is better to have some logical halts prepared than to stop involuntarily.

GENERAL DESIGN

There can be no hard and fast rule that holds both for brief reports which may last no more than ten minutes, and for dissertations lasting upwards of an hour. Early on you should make some outline giving the scope of your subject, and unless your paper is an historical one, this should be brief but fair. If the subject is controversial and you know that some of those present may disagree with you, it makes for a better discussion if you delineate very clearly where there is disagreement. Although this can be done wittily, it is prudent to avoid unkindness. Not because a real row doesn't liven up a scientific meeting—it does, and any organizer should be grateful when sparks fly—but if your intention is to communicate a different point of view or new information, then a polemic may obscure this and the purpose of your paper will be lost. Once you have surveyed the field briefly, don't weary the audience by too much erudition; press ahead

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and tell them what you have done, and why you have done it. While an historical account of the subject as a whole is unwise, a review of your own work, provided it isn't wearisome, is nearly always appreciated. Particularly if you tell of your mistakes, false trails followed, and downright foolishnesses. This is the road that science travels, and your audience will know that you are a true researcher if you record your folly and your wisdom impartially.

After a general account of your subject, the tempo of the narrative should be varied by examples from your work, case histories and similar illustrations. Here the unwary always come to grief. Turgid and boring case histories are one of the bugbears of medical, and especially psychiatric, conferences. Short, pithy and dramatic stories which kindle the imagination and grip the listener should be used, and, since people are quickly sated even with greatest delicacy, there should be few of them. A patient's own words, if properly used and well placed, are worth pages of description.

THE USE AND ABUSE OF STATISTICS

When you present your results, you can use the language of statistics or common speech. You can use either of these but you should be sure, if you decide to use statistics, that both you and your audience are familiar with them. It is boring for those who don't understand statistics to be overwhelmed with standard deviations and chi squareds, and as one of the uninitiated, I always have a sneaking suspicion that the impressive phrases hide something phoney. If you don't understand statistics and have had a friend work them out for you, beware. There is sure to be someone in the audience who will cross-examine you mercilessly and expose your ignorance. It is better to admit this from the start and have your statistician on hand to help.

After results, you should have a section on discussion or interpretation. Here you should note objections to your work and show your audience that you are aware of shortcomings. You may also indicate that there are wider issues which you have not touched on for lack of space. If you have a new treatment and believe your work shows that it is significantly helpful, it is here that the prudent speaker undervalues his own work and allows praise to come from the floor of the meeting rather than from his own lips. This commands respect from the audience who feel that they are listening to a self-critical thinker rather than a boaster.

Does this mean that no definite claims are ever to be made and no opinions ever expressed? Certainly not, but braggart claims need not be made. When a definite opinion is expressed, especially in therapeutics, this should be done with modesty and in a way that will encourage others to test it. If your paper has a critical function, this can be elaborated in the discussion, but every objection should not be met. Some weaknesses should be left deliberately to encourage others to give their ideas and so make the audience participate in your work.

PREPARATIONS AND REHEARSALS

Once you have written your speech, you must shape it for speaking. The first step is to read it through to yourself, remembering that your audience has no opportunity to re-read what is obscure or inaudible. Because of this, it is foolish to place an important finding just after a joke and so lose a vital argument for the sake of a laugh. Once you have removed unharmonious or incomprehensible phrases, a critical audience is needed. An interested colleague, preferably one who is not too conversant with the subject, should then be pressed to listen to the whole paper. He should be asked to note anything that seems to lack euphony, to be incorrect or unintelligible. After this, if at all possible, the speech should be recorded on tape and carefully timed. This is an excellent but chastening discipline. Timing must be done with care. You will, for instance, have been told you have so many minutes for your paper; always aim to end well before your allotted span and in this way, if in no other, you will earn the gratitude of the audience and organizers alike. Much can be forgiven a speaker who doesn't exceed his time. In your final draft, stage directions, in red ink, should be written in the margins as a reminder when the great day arrives.

AUDIENCE RESPONSE

You may feel that a scientific paper is not a drama or a television item. Here you strike the weakness of most papers. Boring, poorly edited and slovenly scripts seem feeble compared with the competent work to which we are accustomed in professionals. It is strange that politicians spend hours preparing and polishing a speech, though speech-making is a daily activity for

them. Medical men, who seldom do this, often indicate by their performance that they are unaware of the effort and thought that should be expended when presenting to the world for the first time, work that may represent years of endeavour. Great politicians who are first class speakers usually have a prepared speech on important occasions, and do not attempt to wheedle their audience with a few wisecracks. Some are born orators, and if you are such a one, you may feel that these notes do not concern you, but even a great orator can be led into talking nonsense if he tries to speak without adequate preparation on a technical subject. Where you have a faculty for memorizing, or where you are a recognized authority, this is sometimes permissible. The very great can be profoundly dull when they meander through unpruned speculation and reminiscence, eking out with witticisms which are not quite apt enough for the heavy task imposed upon them. Great wits are careful to rehearse adequately. I have had several very disappointing experiences hearing famous men make ill planned and poorly delivered orations which could have been much improved by cutting, editing and clear speaking.

If you are speaking into a microphone, there are two things to remember. First, avoid coughing into the apparatus and, second, arrange your paper so that it doesn't make crackling noises every time you turn over a page. To avoid this, your speech should be typewritten with double spacing, on one side of the paper only, and any pauses should be marked in red to catch your nervous eye.

SPECIAL POINTS

A scientific paper should avoid startling claims. It should be audible and it should be prepared, but even when this has been done you may still be misunderstood. If you are speaking to a conference of any size, you should have a summary prepared for the press. Do not be sanguine enough to suppose that this will insure you against misreporting; it won't, but it may reduce the inaccuracies. Never try and be highhanded with the ladies and gentlemen of the press. They are doing their best and often they find it very hard to follow the intricacies of medical discussion. They are looking for a story and if you don't give them one, they will find one, for a good reporter can make headline news from almost anything. Your press sumary then, should contain something newsworthy but should underline very clearly what you do not believe. Pressmen are usually glad to have something to go on in making up their copy.

Your paper should end with a summary underlining all that you have said. Don't be afraid to repeat your conclusions, even if you have stated these several times before. Many of your audience will not have fully understood what you were saying and some may have drifted in during the course of your paper. Don't hedge; science is served best by those who are prepared to sacrifice their ideas as targets for the criticism of others, and by this hard process the new hypothesis is either confirmed or refuted. If you do not tell people where you stand, this necessary end can never be achieved. When you can manage it, your paper should end with a punch line, a phrase rounding off the whole, a little flourish before the curtain falls, to remind your audience that medicine is still a learned profession and also an art.

THE DISCUSSION

Papers are usually followed by a discussion and recently it has become fashionable to have a discusser assigned who has read the text beforehand. These discussers are mixed blessings, for while some are a source of valuable and pertinent criticism, others take the opportunity to squeeze in a small and not always relevant paper of their own, and others still are so tedious and discursive that the audience forgets what the original paper was about. A strict chairman, who ensures that time is not wasted in long-winded blatherings, is essential for a well run medical convention. It is seldom that the organizers of these functions appoint the right man for this tricky job. During the discussion you should take careful notes and in the last minute or two you should answer any questions that have arisen, sum up briefly once again and dispel boredom by an apt observation. If you are alert and quick witted, you can save your paper and make it memorable for your listeners, even when the discussion has meandered and has become very tedious.

PREPARING FOR PUBLICATION

The epilogue comes when you prepare your spoken paper for publication in a journal. This is less difficult than turning an article into a speech, and if you have prepared well, may involve only

a little editing, attention to punctuation, and checking and putting in references. This is one of the more boring penalties that we pay for our preoccupation with exactness.

SUMMARY

Bernard Shaw once said "He who can, does, and he who cannot, teaches". This is my excuse for the shortcomings of this talk, in which I have outlined some of the difficulties in preparing a spoken paper. Planning and preparation are necessary to make a speech pointed, easily understood, and well within the time that has been allocated to it. Pictures and diagrams should be used cautiously; when they cannot be avoided, expert help should be sought in preparing them. A medical audience, like any other, has to be enchanted, not dragooned. Enchantment always requires effort, forethought and a certain amount of that intuitive feeling for an audience found in stage players. Once you have ensured that your speech is witty, audible and brief, it should finish with a summary that will stick in the mind like a barb. Having said all this, and realizing that in doing so I have laid myself open to sharp and well aimed criticism, I shall end with a Devonshire proverb: "Don't you do as parson does, but do as parson says".

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THE FUTURE OF MILITARY MEDICINE

BRIGADIER J. N. B. CRAWFORD, M.B.E., E.D., M.D.,* *Ottawa*

AT THIS TIME the Royal Canadian Army Medical Corps is looking back on fifty years of achievement. Many doctors in Canada have contributed to the accomplishments of the past and this may be an appropriate time to give some thought to military medicine of the future.

At the outset, it may be well to consider what is meant by the term "military medicine," and it will be helpful to recall the stated tasks of the medical service of the Army: to maintain the health of troops in the field, to collect and transport sick and wounded, to maintain medical records, to maintain medical supplies, to treat the sick and wounded. The order in which these tasks are listed may be accidental. They are mutually inter-dependent and the successful accomplishment of any one depends upon the efficient performance of the others. Military medicine is that mixture of doctoring and administration which enables a doctor to accomplish these tasks. The individual medical officer may specialize in one or another of these functions, but the success of the medical service as a whole depends upon the complete integration of all of them.

The conscientious medical practitioner in civilian life looks upon his patient as an individual. The diagnostic aids which the doctor employs, the drugs which he uses in treatment and the length of time of convalescence are governed to some extent by the economic status of the patient, and the surgical equipment which the doctor uses is chosen largely in accordance with his individual preferences. The military doctor, while retaining his concern for the patient as an individual, finds this attitude modified somewhat by the fact that his patient is a cog in a fighting machine who must be returned to fight again as quickly as possible or, if he is so severely injured that he cannot fight again, he must be evacuated from the fighting area. The civilian medical practitioner who dons a uniform in service of his country in time of emergency finds that his individual preferences in the choice of surgical equipment must be limited to the overall problem of supply in a theatre of war. When he complains that a patient in whom he is particularly interested, and whose case he wishes to follow to completion, is transferred away from his control, he may have failed to appreciate that a tactical situation is developing which will shortly produce a heavy patient load and require every bed which can be made available in his particular hospital.

In other words, the civilian doctor works essentially as an individual and develops a very personal relationship with his patient. The military doctor must learn to work as a well-trained member of a large and somewhat impersonal team, while at the same time gaining the confidence of his patient during the period of his personal contact with him.

While the sphere of treatment of patients is

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doubtless the most satisfying to the soul of every doctor, the provision of competent treatment personnel is not the most pressing problem for the medical services of the armed forces in time of war. Always in past emergencies there have been, and undoubtedly in the future there will be sufficient competent doctors who will flock to the colours to play this treatment role. This service will not be entirely without gain to them. Under conditions of war and in a relatively short period a wealth of clinical experience is offered which could be gained in no other way. It is not surprising that under the circumstances of war technical advances in treatment are made which are reflected to the benefit of the entire medical profession.

The problem of provision of adequate treatment of the sick and wounded in time of war is great, but equally important are the problems of organization and administration of medical services: how to ensure that doctors are provided for the armed forces without crippling the medical care of civilians remaining on the home front; how to ensure that doctors in the armed forces are employed with the utmost economy and in accordance with their special abilities; how to keep troops free of those diseases which are endemic in a theatre of operations or which may be introduced deliberately by the enemy; how to maintain troops in a state of utmost fighting efficiency under the conditions prevailing in the ships, aircraft or vehicles in use and with the equipment which they carry; how best to collect the wounded from a field of battle and transport them quickly to treatment; how to supply the best possible in medical equipment, instruments and drugs to the places in which they are required, and how to maintain this supply under operational conditions, all the while relating this requirement to the potential of the manufacturers and to the system of supply in allied forces; and, finally, how to give guidance to the medical profession as a whole in those fields which are not covered in ordinary civilian practice, for example, the problems of flight at high altitudes and great speed, of human behaviour under conditions of extreme cold, of the treatment of casualties produced by such special weapons as the atomic bomb or poison gases, and of treatment of casualties in the mass as opposed to the treatment of the individual.

These problems face the military doctor, and their solution demands much study and training of a very special kind. Moreover, this study and training must be going on constantly in time of peace in preparation for the possibility of war. It is not sufficient to rely upon native ingenuity to produce a suitable solution to these problems when an emergency is upon us. Thus, there is a very definite requirement for the doctor who is prepared to study these problems constantly; in short, who is willing to make a career of military medicine.

Such a career offers a great variety of interest, as can be gathered from what has been written above, and yet a career in military medicine does not appear to be popular among Canadians. Canada is unique among nations in that military service is entirely voluntary. No one is forced by law to spend any time in the armed forces and this applies equally to the medical services of the armed forces. This is a matter of governmental policy and it is not proposed to discuss its virtues or defects; but lacking universal military service, military medicine must attract young doctors through its own merits.

Why a career in military medicine has not made a greater appeal to the young Canadian doctor has been a matter of grave concern and serious study in the armed forces and should equally be a matter of concern to the entire medical profession of Canada.

Does the lack of interest of the young doctor in a career in the armed forces indicate that the military doctor does not receive sufficient pay? This has been advanced as one explanation for the situation and it is true that the average pay of medical officers in the armed forces does not equal the average pay of all Canadian doctors as shown in the returns from the Dominion Bureau of Statistics. The young doctor enters the Army in the rank of Captain, or an equivalent rank in the Air Force or Navy, and if he is married he will start with a take-home pay of about $5,300 a year after pension payments and income tax have been deducted. He can look forward with some certainty to promotion to the rank of Major and this may occur fairly quickly. The starting pay, after all deductions, for a married Major is in the order of $6,000 a year, and this is subject to automatic periodic increases. Thus, while the service medical officer cannot expect to sit in the lap of luxury, neither is he a candidate for the relief rolls. The discrepancy between the pay of the service medical officer and the civilian practitioner of similar medical

experience is, to some extent, offset by the freedom from the worries of running his own business, generous periods of annual leave, a very good pension plan and a general sense of financial security which the military doctor enjoys.

Does the lack of interest of the young doctor in a career in the armed forces represent an attitude on his part that he cannot practise "good medicine" in the services? One cannot deny that in a time of real peace in an army made up of young men selected on the basis of physique, there are few wounded and only little in the way of sickness requiring treatment. In time of war, of course, there are more than ample opportunities for excellent clinical work and many have gained clinical experience which could never be acquired in civilian life. Even in time of peace the services have made a very sincere attempt to improve the opportunities for good clinical practice. Wherever military hospitals are situated they are equipped with the very best in the way of apparatus, instruments and drugs. The medical officer is under no necessity to consider the economic status of his patient, nor need he feel that the patient must be returned to work before adequate convalescence has been completed. He has complete freedom to call in specialist consultants, either service or civilian, whenever he feels such services are required, and this is limited only by the geographical location of such consultants. In service communities which are more or less isolated in Northern Canada, the service medical officer provides complete treatment, not only to the serviceman but to the dependents of servicemen and in these locations medical practice of the most comprehensive order is carried on by the service medical officer.

In many urban areas military hospitals have been combined with hospitals of the Department of Veterans' Affairs and service medical officers work in these without considering whether their patients are active servicemen or veterans. Thus the scope of activity of the medical officer is greatly enlarged with a corresponding increase in the interest provided by his work.

The services have been remarkably successful since the end of World War II in implementing a programme of postgraduate education of the medical officers. Present regulations permit a medical officer of the regular services to spend one year in each five year block of service in a type of activity which can be counted toward specialist qualification. The success of this programme is measured by the very considerable number of service medical officers who hold specialist qualifications, certificate or fellowship, from the Royal College, which they have obtained under service auspices.

The Canadian Forces Medical Council is particularly interested in the question of professional advancement of medical officers. It is felt that a good deal can be done to increase the professional interest in the medical services by adopting a policy of free interchange of professional personnel between hospitals operated by the three medical services. Such policy has been adopted and a start has already been made on putting it into practice.

Does the lack of interest of the young doctor in a career in the armed forces indicate his unwillingness to adopt a way of life which he feels does not permit him and his family to settle down in any one spot? To some people this nomadic form of existence is not unattractive; to others it represents a very real disadvantage. It is true that in the past the service doctor has been moved from place to place far too frequently. This has been necessitated by the commitments undertaken by Canada on three continents. It has been necessary to move doctors to the spots of greatest need. It is reasonable to suppose that, as the numbers of available medical officers increase, so will the frequency of moves be decreased. It should be borne in mind that the services are no more anxious to move a medical officer than the medical officer is to be moved.

The military pattern of Canada has changed greatly in recent years. We met the challenge of the First World War by raising a "citizen army" which established an enviable reputation for the Canadian fighting man and after the war these soldiers returned to their civilian occupations. The standing army was reduced to very small size and its role was that of a training cadre only. We met the challenge of the Second World War in the same way and with the same success and in 1946 it was believed briefly that the standing army might return to its traditional peacetime role. However, the growth of Canadian nationhood has brought upon us an increasing international responsibility. Little by little we are taking upon ourselves a part of that mantle so long worn by the United Kingdom. Today in a time of so-called peace, we are defending our country with troops stationed on foreign soil in

Europe and in Asia. It is difficult to believe that these responsibilities will become less in the near future, and in the future, as in the past, wherever Canadian troops may be stationed they will be accompanied by Canadian medical units.

The future of military medicine depends upon the number of doctors who are prepared to practise it. In the above paragraphs a number of questions have been asked as to why more Canadian doctors are not prepared to accept this responsibility and it is probable that the answer to none of them alone is the answer to the problem as a whole. It appears to those of us who are engaged in the practice of military medicine that a challenge lies with the entire medical profession of Canada. So long as Canada must maintain armed forces, military medicine will have a role to play and its practitioners must come from the ranks of Canadian doctors. How this is to be accomplished is commended to the very earnest consideration of the profession as a whole.

CARDIAC COMPRESSION FROM FUNNEL-CHEST (Part Two)

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IN A PREVIOUS PAPER, cardiac compression due to funnel-chest was discussed with remarks upon relative frequency of occurrence, radiographic diagnosis and operative relief. The author also mentioned certain electrocardiographic patterns which might help in the diagnosis.[1] These were: (a) relatively sharply-pointed P waves in many of the leads, and (b) depression of the S-T segment in leads 2, 3 and aVF.

Now many more cases of this deformity have been seen and certain statements may be made on the basis of more evidence.

1. The degree of anatomical deformity is not necessarily an indication of the presence or absence of interference with cardiac function. Some of the most marked deformities caused no compression; other patients with slight apparent deformity proved to have serious cardiac embarrassment.

2. Those cases in which the heart could "escape" into the left chest seemed to have less trouble, and that at a later age. This would suggest that displacement, although giving rise to the "kinking and torsion" of the great vessels mentioned previously, is not as serious or as immediate a matter as compression.

3. The cases in which the heart could not escape to the left but was held in a relatively central position, possibly through pleuropericardial adhesions on a rheumatic or other basis, were much more serious as regards interference with proper cardiac function.

4. All of the patients upon whom Dr. A. J. Grace performed the Dailey type of operation (in which the elevated sternum is held up by a section of ninth rib) recovered and showed a marked improvement in exercise tolerance and general strength.

5. All of these cases had shown depression of the S-T segments in 2, 3 and aVF preoperatively; in all, these criteria disappeared in from one week to two months postoperatively.

6. The pointed P waves mentioned earlier were not present in all cases.

7. In the great majority of those cases in which actual cardiac compression could be demonstrated there was noted an apical systolic murmur varying usually between grades two and four in intensity according to the criteria of Levine and Harvey.[2] The apical murmur mentioned above was systolic in time and yet could be distinctly differentiated from the first sound. This murmur was either greatly diminished or not present after operation. Investigation revealed that the murmur was somewhat diminished on inspiration and occurred at its loudest on forced expiration. In this, it was acting in a manner similar to other organic apical systolic murmurs.[2] Since this murmur was relieved to some extent by corrective surgery which increased the effective diastolic space, one can only conclude that it must have a more or less mechanical cause. In this connection two possible explanations present themselves.

(a) Since the heart in this syndrome cannot assume a proper spherical shape in full diastole and early systole, it naturally follows that the mitral ring will not be truly spherical in shape but will assume the configuration of a more or less flattened oval. As systole is initiated and the mitral leaflets close, it is possible that the edges of the leaflets do not approximate each other exactly and one would imagine that a certain degree of "wrinkling" with or without

overlapping of the leaflets occurs along the edges of contact. Such a situation would likely produce some mitral regurgitation.

(b) It is common experience to find mitral murmurs in conditions such as anæmias or hyperthyroidism in which the velocity of blood flow is increased. It was pointed out earlier in discussing this syndrome that, because of interference with diastolic filling, the stroke volume is decreased, and the heart, in order to meet the demand of quite moderate exercise, must increase its rate and therefore must cause an increased velocity of blood flow although the quantity of blood may be smaller.

It is also possible that both of the above factors could apply together as the cause of the apical systolic murmur.

In discussing this condition we are confronted with a problem in semantics. While the word "compression" has been used, and has a valuable dynamic connotation, it does not seem to possess the exact meaning required to delineate this situation. Only in forced expiration, and then only intermittently, does any actual compression take place. One could be extremely careful and speak of "interference with diastolic filling by posterior displacement of the sternum," but, while stating the case, it would prove somewhat unwieldy for purposes of description. It might be considerably easier to use the term "effective diastolic space (E.D.S.)." This would refer to that amount of room in the anterior mediastinum necessary for diastolic filling to the extent determined by the exercise requirements of the particular patient. It will be noted that such a term *must* be relative, i.e., a normal E.D.S. in a woman of fifty should not mean that she could run the half mile in three minutes but that she could perform the duties necessary to her manner of living without noticeable cardiac embarrassment. This could be important in deciding whether or not to operate in these cases. In my opinion the physician should first determine whether the particular funnel-chest is interfering with heart action. If not, there is no reason for surgery, as this is too drastic a procedure to undertake on cosmetic grounds. On the other hand, if there is some interference with cardiac function, the physician must decide whether the E.D.S. is sub-normal to such an extent that the ordinary activities of the patient are made difficult or dangerous.

He should consider: (a) The history, dating from deformity as an infant, with later onset of such symptoms as dyspnœa, palpitation and retrosternal pain, and the amount of exertion required to elicit these symptoms. (b) A specialized opinion on the radiographic appearance, which must always include fluoroscopy. (c) The electrocardiographic record from two aspects, namely, the presence or absence of the previously mentioned criteria, and the presence or absence of evidence of myocardial damage.

This system for diagnosis obviously does not apply to very young children. Before the age of 18 months this deformity may be prevented from progressing by a relatively simple procedure in which the substernal ligament is freed from the inner surface of the sternum by blunt dissection upwards. This allows the medial segment of the anterior tendon of the diaphragm to "pull" on the ligament during inspiration without displacing the sternum in a posterior direction. In the presence of funnel-chest seen after 18 months of age it would seem logical to postpone any operative procedure until it has become evident that the effective diastolic space is limited.

SUMMARY

On a basis of 19 cases of funnel-chest certain generalizations are stated.

An apical systolic murmur was found in almost all cases. This diminished or disappeared on corrective surgery. Possible causes of this murmur are mentioned.

The pointed P waves were found in a majority of the cases in which the effective diastolic space (E.D.S.) was found to be subnormal.

Depression of S-T segments in leads 2, 3 and aVF was noted in all cases operated upon. All of these patients obtained great relief and improvement in cardiac function from the operation. In all of these cases, in from one week to two months postoperatively, the depression of the S-T segments disappeared.

Therefore, it seems that this depression, the possible cause of which was discussed in a previous paper, has some value as a diagnostic criterion in estimating cardiac "compression" or subnormal "effective diastolic space."

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305 Oxford Street.

Case Reports

MALIGNANT PHEOCHROMOCYTOMA OF ADRENAL*

A. BELKIN, M.D.,
D. G. MACQUEEN, M.D. and
JOHN D. DUFFIN, M.D., *Calgary, Alta.*

SOME YEARS AGO we reported on a 59 year old male suffering from paroxysmal hypertension,[1, 2] due to a large pheochromocytoma of the right adrenal weighing 475 grams and assaying pressor activity of approximately 2 mgm. epinephrine per gram of tissue. Symptoms due to the tumour had been present for more than three and a half years. The gross and microscopic appearance of the tumour did not indicate malignant tendencies. The use of early and sustained postoperative adrenaline therapy was stressed as an important factor in recovery.

Following recovery from operation the patient's follow-up was facilitated by several readmissions to hospital for sundry reasons not related to the tumour. During this period the patient remained free from his previous symptoms and on no occasion was there anything to suggest recurrence of chromaffin tumour. On July 31, 1949 the blood pressure was recorded as 108/58 and the ECG abnormalities had reverted to normal. On December 17, 1949 B.P. was 180/90 and 130/86 and the glucose tolerance curve was normal. On July 23, 1951 B.P. was 110/70.

The final stay in hospital during the course of which the patient died, began on June 5, 1952, more than three years after removal of the tumour. The main complaint of this 63 year old man was a painful lump opposite the anterior end of the third left rib. He reported a recent weight loss of 10 lb., slight anorexia and deafness in the right ear. There were rales in the lower lobe of the right lung, the B.P. was 155/85, pulse 68, and erythrocyte sedimentation rate 65 mm/hr. (Westergren). Chest films showed an irregular flattening of the right diaphragm with a round opacity 4.5 cm. in diameter apparently arising from or near the right diaphragm. Several other nodular opacities of smaller size were noted in both lung fields, in the right para-hilar area, and in the third rib anteriorly. An intravenous pyelogram suggested that the superior calices of the right kidney were deformed. A biopsy of the painful lump in the third left rib was reported as anaplastic carcinoma.

From this time on, the patient's general condition gradually deteriorated, and from time to time additional symptoms were noted, including occasional unexplained, sudden severe abdominal pain and right chest pain. On July 28, 1952 a right pleural effusion was noted and the patient complained of periodic band-like headaches. Tinnitus was also present which was considered to be due to cochlear damage from previously noted Ménière's syndrome.

In October, 1952 a persistent cough had developed with production of some sputum in which malignant cells were demonstrated. Dyspnœa developed which was relieved by aspiration of the right pleural cavity, from which serosanguinous fluid was obtained. On November 21, 1952, osteolytic areas in the right ilium were demonstrated on radiographic examination, and progressive metastatic infiltration of both lungs was reported. Blood pressure readings on several occasions at this time ranged from 130/80 to 170/110. During the last two months deterioration continued, featured by cachexia, asthma, and continuous chest, abdominal, low back and pelvic pain. The patient died on February 26, 1953.

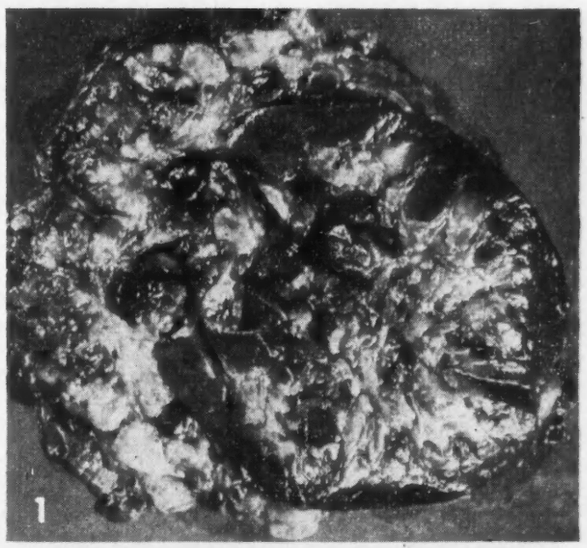

Fig. 1.—The recurrent tumour in the right suprarenal area. Fig. 2.—The tumour nodule in rib.

Autopsy revealed the following significant findings: The right adrenal area was filled by a large reddish grey tumour mass of irregular shape, approximately 15 cm. in greatest measurement and quite friable (Fig. 1). The upper pole of the right kidney was completely encircled by neoplastic tissue which had extended through the kidney capsule from without. The right adrenal gland was absent. The left adrenal gland was normal in size, shape and architecture and contained no tumour tissue.

The upper abdominal retroperitoneal and para-aortic nodes were enlarged and filled with tumour deposits similar in appearance to the tumour in the right suprarenal area. The liver showed a few superficial tumour

*From the Colonel Belcher Hospital, Calgary.

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nodules on the capsular surface, together with massive tumour involvement of the right lobe posteriorly where the recurrent supra-renal tumour had spread by direct extension into liver tissue, over a considerable area. The left lung was normally aerated but contained approximately a dozen scattered reddish-grey tumour nodules of various sizes, the largest being 1 cm. in greatest measurement. The tumour tissue had replaced almost the whole of the lower lobe of the right lung and there was slight extension into the middle lobe.

A swelling was present in the third left rib between the anterior axillary line and the sternal junction (Fig. 2). This was made up of expanded cortical bone with tumour tissue extending from the medulla through cortex to become continuous with the soft tissues around the rib. The heart which weighed 350 gm. was slightly displaced toward the left by tumour involving the mediastinum and right lung.

Microscopically the tumour tissue presented essentially the same appearance in all situations. The tumour was very cellular, being made up of large cells with a finely granular cytoplasm and relatively regular appearing nuclei and nucleoplasm resembling in many respects the normal cells of the adrenal medulla (Fig. 3). It contained many large thin-walled vascular channels and was indistinguishable from the original tumour, diagnosed as a pheochromocytoma 4 years previously.

Bio-assay showed that the amount of pressor substance (possibly Adrenaline and Noradrenaline) in each gram of tissue was equivalent to 1.5 mgm. of the epinephrine (Adrenaline) standard. This is about twice the concentration usually found in the resting gland.*

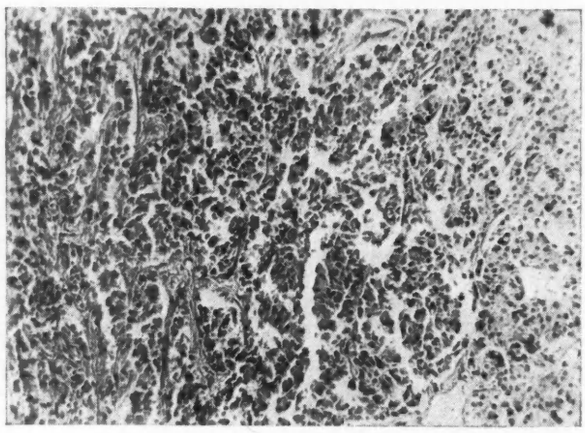

Fig. 3.—Tumour tissue, H. & E. x 150.

Malignant pheochromocytoma of the adrenal is a rare tumour. According to Karsner[3] not more than 15% of adrenal chromaffin tumours prove to be malignant. It is of interest to note that, despite the tremendous quantity of pressor substance being elaborated by the tumour deposits throughout the body, paroxysms of hypertension did not recur following the removal of the original tumour.

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*This assay was done in the Food and Drug Division of the Department of National Health and Welfare, Ottawa.

A CASE OF OCULAR TORTICOLLIS

JACQUES AUDET, M.D., *Quebec*

REGARDLESS OF THE ETIOLOGY, it is agreed that torticollis means any abnormal inclination of the head toward either shoulder with or without pain. In order of frequency, the medical men who are most often consulted about this condition, after the general practitioner and pædiatrician, are the orthopædist and the neurologist. It is very seldom that the patient visits the ophthalmologist in spite of the undisputed and relatively frequent occurrence of ocular torticollis.

Generally four varieties of torticollis are recognized, depending on the etiology: congenital, spasmodic, secondary, and ocular or compensatory.

CONGENITAL TORTICOLLIS

So named because of its early appearance and also known as retraction torticollis, this faulty posture is characterized by the permanent approximation of the mastoid process and the homolateral sterno-clavicular joint. This type of torticollis may be due to a hæmatoma or a fibrosis of the sternocleidomastoid muscle. It often appears in a child following a breech presentation. Facial asymmetry is then marked and frequently associated with a certain amount of strabismus.

SPASMODIC TORTICOLLIS

Spasmodic torticollis results from an intermittent contracture of the muscles of the back and side of the neck, the sternocleidomastoid and the trapezius. The attacks last from 20 to 30 seconds during which the head is inclined to the affected side and rotated towards the opposite side. This contracture cannot be controlled. Spasmodic torticollis generally appears in the third decade of life. When it is accompanied by occipital neuralgia it is called spasmodic neuralgic torticollis.

SECONDARY TORTICOLLIS

Secondary or acquired torticollis may be: (a) osseous, or (b) infectious. (a) Osseous torticollis is associated with disorders of the cervical spine, a dislocation or a fracture, incipient Pott's disease, a congenital anomaly of the cervical spine,

or arthritic involvement. (b) Infectious torticollis appears as an inflammatory and painful manifestation secondary to a cervical cellulitis, a carotid adenophlegmon or an acute myositis. A similar torticollis may result from a tumour or other disease of the cerebellum, disease of the labyrinth, and certain painful conditions such as otalgias.

OCULAR OR COMPENSATORY TORTICOLLIS

Ocular torticollis is considered to be a compensatory head position taken up to prevent diplopia. The diplopia results from a paresis or a paralysis of one of the vertically acting muscles which elevate or depress the eyeball. These are the superior and inferior recti and the two obliques.

To compensate for the vertical diplopia the child has three possible choices: (a) to shut one eye; (b) to incline the head so as to level both images; (c) to develop a convergent or divergent strabismus so that only one image is seen. Theoretically, congenital ocular torticollis manifests itself only after the appearance of a certain amount of binocular vision. Therefore, it cannot occur before the fusion faculty has sufficiently developed, at about the age of two years.

On examination the thing that characterizes ocular torticollis is the vertical deviation of the eyes which occurs after the head has been replaced in an upright position. The deviation will vary with the direction of gaze, and by study of these variations the muscles concerned can be identified. By use of prisms it is easy to measure the power of the different vertically acting muscles, and to determine the strongest and the weakest. During the examination care must be taken to maintain the head in a vertical position. Frequently, a paresis is found of the superior rectus of the eye on the side towards which the head is inclined. In such cases there is almost invariably overaction of the inferior oblique of the other eye. The superior oblique is often involved, especially if there has been an injury to the rim of the orbit. The history should be complete and detailed. The sternocleidomastoid muscles should be carefully examined; they will usually be found normal.

It should be emphasized that in this type of torticollis the patient can straighten his head voluntarily without difficulty. Often there are complaints of deep pain in the neck in the region of the mastoid process. The pain sometimes becomes worse after prolonged reading or close work.

Ocular torticollis occurs frequently but is not diagnosed often enough. Dr. L. Guy made a survey of all the cases of torticollis admitted to the New York Orthopaedic Dispensary and Hospital during a period of five years and found a large number of cases of ocular torticollis. It is interesting to note that most of these patients had already been examined by ophthalmologists (and the correct diagnosis missed).

The differential diagnosis of torticollis may be tabulated as shown, according to Dr. L. Guy:

TABLE I.

Ocular	*Orthopædic (by retraction)*	*Neurologic (spasmodic)*
1. Birth; forceps.	1. Birth; breech.	1. Birth; Generally normal.
2. Torticollis: appears with faculty of fusion (age 2) or accident.	2. Torticollis: since birth or accident.	2. Torticollis: generally from 20 to 30 years of age.
3. Faulty posture: may be corrected voluntarily by patient.	3. Faulty posture: cannot be voluntarily corrected.	3. Faulty posture: intermittent.
4. Ocular examination: vertical muscular abnormality.	4. No abnormality of ocular mobility.	4. No abnormality of vertical ocular mobility.
5. Facial asymmetry: slight.	5. Facial asymmetry.	5. No facial asymmetry.
6. Radiographs of cervical spine negative.	6. Radiographs may show abnormality.	6. Radiographs negative.
7. Sternocleidomastoid muscles: supple, slightly hypertrophied.	7. Sternocleidomastoid muscle: fibrosis.	7. Sternocleidomastoid muscles: spasmodic contractures.

Observations of a case led to the writing of this article:

A.A., age four and a half years, appeared for the first time for ophthalmological examination on December 17, 1952. It was noted that the child's head was markedly inclined forward and to the left. The mother said that this was the habitual and normal posture. The visual acuity of each eye was normal, and eye examination revealed no refractive error. There was no apparent strabismus and binocular vision was present. There was a slight facial asymmetry, but the sternocleidomastoid muscles seemed supple enough. However, on straightening the child's head a vertical strabismus immediately appeared; the right eye became higher than the left and binocular vision was lost. Measured with prisms, the deviation was 25 degrees in the primary position, and

Fig. 1

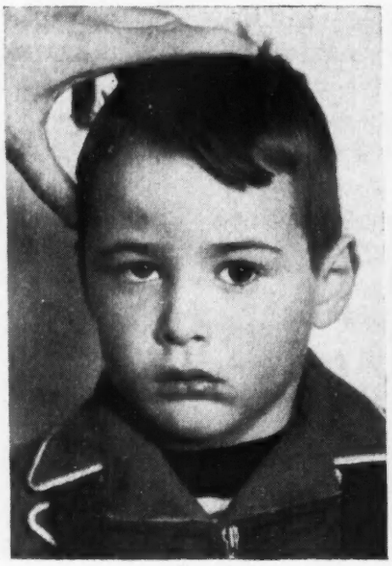

Fig. 2

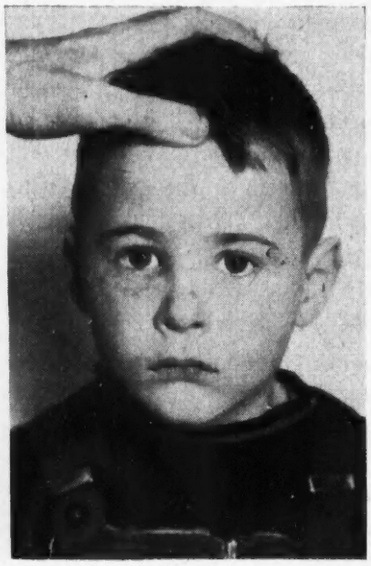

Fig. 3

Figs. 1 and 2.—Before operation. Fig. 3.—After operation.

increased greatly when the gaze was directed upward and to the left. Examination showed that the superior rectus muscle of the left eye was weakened and that the inferior oblique muscle of the right eye was too strong.

The mother told us that the child had had a "wry neck" since birth, delivery having been normal. The child had been seen by several doctors and various opinions had been given as to cause and treatment. Recently the parents had consulted two orthopædic surgeons, one of whom advised exercises and waiting, the other an operation and the application of a plaster cast.

Ophthalmological examination permitted another interpretation and confirmed the diagnosis of ocular torticollis. The correction of the strabismus was then taken under consideration. On December 29, the inferior oblique muscle of the right eye was operated upon through a cutaneous incision, the muscle being isolated from its bony insertion and several millimetres resected. This single operation completely corrected the vertical strabismus and the torticollis. The day after operation the child straightened his head, and since then the faulty posture has disappeared. The physical improvement has favourably influenced the child's bearing, for he has abandoned his apparent timidity and become resourceful and independent.

SUMMARY

A case of ocular torticollis is presented, with comments on several conditions which resemble this syndrome. Ophthalmological examination and the treatment followed in this case show: (1) that ocular torticollis does occur; (2) that it is necessary to make an ophthalmological examination before the investigation of any case of torticollis of uncertain etiology is considered complete; (3) that some cases of torticollis can be cured by the correction of a vertical strabismus.

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A FOREIGN BODY IN THE OMENTUM

L. ACHMATOWICZ, M.D.* and
T. A. U. CLUNIE, M.B., Ch.B., D.T.M.,†
Fiji

THE FOLLOWING CASE is reported because of its rarity to illustrate the length of time a foreign body of moderate size may be present in the abdomen.

An Indian barrister, aged 47, who has resided in Fiji for the last 14 years was admitted to hospital for investigation and treatment. He complained of abdominal pains before and after meals, anorexia, general weakness, and persistent constipation. He had been a regular yaqona (kava) drinker and various skin manifestations and sensations of which he complained were attributed to this habit.

He had been treated for peptic ulcer and for amœbiasis. Diagnosis was made difficult as he steadfastly refused sigmoidoscopy and x-ray examination. About a year ago he consented to x-ray examination at the Colonial War Memorial Hospital, Suva, when plain film revealed an unusual foreign body shadow in the left iliac fossa and three small shadows in the right iliac fossa. He refused permission for sigmoidoscopy. Barium enema examination was carried out largely to determine whether or not the shadows seen on the straight film were within the lumen of the bowel. He was admitted to Lautoka Hospital in April 1953, and at last consented to operation.

On examination, abdominal tenderness was revealed on palpation in the right and left iliac fossæ. The radiographic shadow in the left iliac fossa was pencil-shaped,

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†Senior Medical Officer, Colonial Medical Service (Retired).

about two inches long and about the thickness of a pencil. It was located outside the pelvic colon. The patient had no recollection of swallowing or of inserting into the rectum a foreign body; he had not suffered from any acute abdominal condition.

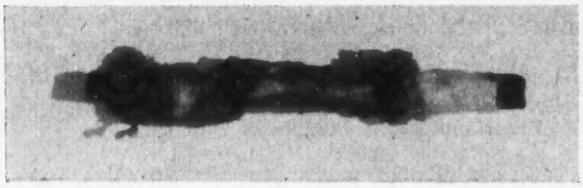

Fig. 1

Under spinal anæsthesia the abdomen was opened through a mid-line incision. The appendix, adherent to the ileum, was removed. It contained hard fæcal masses. The left part of the omentum was adherent to the peritoneum of the left iliac fossa. In the omentum near its left lower edge, which was freely movable and not adherent to the intestines, there was a foreign body which was removed. Numerous adhesions also existed over the transverse and pelvic colon, especially below the left colonic flexure. The patient made an uneventful recovery.

The foreign body proved to be a piece of octagonal slate pencil two inches long and one-sixth of an inch wide with blunt ends. The foreign body was wrapped in fibrous tissue and omentum difficult to remove. We are informed that such pencils were in common use by young Indian children 40 years ago.

It is hard to believe that a man of education would have no recollection of swallowing or having introduced into his rectum such a foreign body. On the other hand it is possible that a child could swallow part of a pencil and make little fuss. When at a later date a perforation of the bowel and peritonitis took place, he was treated without realizing the true nature of the disease.

It is thought that the foreign body most probably perforated the transverse colon or the left colonic flexure in the place where the leaflets of the omentum were attached to it, and then became sealed off. During approximately 40 years it was pushed downwards and finally reached the lowest edge of the omentum. This interpretation is supported by the fact that the foreign body lay just at the lowest edge of the omentum, which was in this region freely movable; neither the small nor large intestine was adherent to it.

We wish to thank Dr. J. M. Cruikshank, the Director of Medical Services, Fiji, and Inspector-General of the South Pacific Health Service, for permission to publish this case report.

We also wish to thank Mr. R. C. Burgess of the Colonial Sugar Refining Company Dispensary Staff, for the photograph of the foreign body, and for its chemical analysis.

Clinical and Laboratory Notes

RESEARCH IN GENERAL PRACTICE

H. GIBSON HALL, M.D., *Toronto*

[In this paper Dr. Gibson Hall fulfils characteristically one of the cherished hopes in the minds of those who have finally brought the College of General Practice to fruition. He has responded to the idea of stimulating research in general practice, and not only has talked about it (and talked very well) but has actually done something about it.

His paper took the form of a letter to Dr. Victor Johnston, who has added his own commendation.—EDITOR.]

IN READING OVER the aims and objects of the College of General Practice of Canada, it delighted me to see that "To arrange for research in general practice" is one of them.

I have always felt that general practice was rich in opportunity for research. In the hospitals we see and study advanced diseases mostly. Where then shall we see and study sickness in its earliest forms? It seems to me that this is the special field of the general practitioner. Very often the G.P. sees the patient at an early stage of his illness when it is not easy to decide whether it is an unusual anatomical or physiological condition or an incipient pathological lesion. To use a simile, often the layman may be able to name and classify the mature plant but even the skilled botanist finds it difficult to identify the first seedling leaf as it appears.

It seems to be a rather general impression that medical research work can be done only in a hospital or in the environs of a university. The array of glassware and of expensive equipment so often seen makes it appear as though only those who receive a grant from the government or from some endowment fund could possibly undertake such a project. This is not true. To do research work the enquiring mind requires but two things—accurate observation and absolute honesty.

Because I believed this to be true, I began to record a few years ago some of the routine office procedures. Such things as temperature, pulse, respiratory rate, blood pressure were noted. The relationships between these routine procedures and many other variables were sought, such as height, weight, age, number of hours after meals, etc. Many interesting facts have come to light in this way.

In the hope that some of the members of the College may be interested and would join with me in further study I shall briefly outline a couple of the findings. The first of these has to do with the variation of the blood pressure with

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respiration. In a series of 224 cases it was found that the threshold of sound indicating the systolic blood pressure is accentuated with expiration. In this series the systolic blood pressure was actually raised from 2 to 6 mm. Hg. with expiration in 55% of the readings. This elevation occurred in 42% of the cases in the supine position and in 69% of those in the sitting position. With this in mind, it is no surprise to find that there is a very pronounced rise in the systolic pressure during the expiratory phase in an asthmatic attack. In some cases it was found that this rise might be as much as 30 mm. Hg. but the average in 27 cases was 16 mm. Hg. Only a small number of cases of advanced pulmonary emphysema were studied but in these no variation in the blood pressure was found with respiration.

Another finding which was interesting and which might prove to be of clinical value was the alteration which occurs in the blood pressure when the patient changes position. In order not to complicate the picture, I shall give only the figures for the supine and the sitting positions. In these cases the patient's blood pressure was taken after a rest in the supine position and then retaken after he had been sitting on the side of the bed for long enough for the pulse and blood pressure to become stabilized.

TABLE I.

	Difference in systolic pressure Sitting : Supine Average	*Difference in diastolic pressure Sitting : Supine Average*
Normals (Age 25 - 49) 120 cases	+¾	+8
Normals (Age 50 - 75) 120 cases	+1½	+8
Hypertensives (B.P. 140/90 and up) 130 cases	+4	+11½
Hypertensives with enlargement 97 cases	—6	+6
Hypertensives with angina 43 cases	—8	+7
Hypertensives with œdema 26 cases	—11	+11

When these findings were first noted about three years ago, it was decided to study the individual case to see if it conformed to this pattern. This has now been done in a small number of cases for which the records are available for a period of five or six years. Four of these cases are given below. The figures relate to the observed variation in blood pressure from the supine to the sitting position.

TABLE II.

	1948	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*
Case (D.J.C.).....	+10	+8	—	+16	*+20	—	—14
Case (D.B.).....	+18	—	+4	*+6	—4	+2	—8
Case (W.S.M.)....	—	—	*+16	+4	—8	—	—16
Case (H.N.T.).....	+16	+22	—	*+6	—6	—2	—10

*Enlargement of heart noted.

These findings are interesting, I believe, but they are the work of one individual and are subject to criticism because of that fact and also because of the very limited number of cases. By extension and by repetition, the value of these findings can be properly determined. Would any members of the College be willing to carry on this investigation in their own practice? If so, would they be kind enough to communicate with me, so that I may give them a more detailed outline of the work to be done.

1050 Avenue Rd.

Note by Dr. Victor Johnston, Executive Director of the College of General Practice of Canada.

The College of General Practice wishes to promote planned research projects by general practitioners. It fully endorses Dr. Hall's efforts in this field and will support him in his attempts to have physicians join with him in the study of blood pressure problems.

A SHORT REPORT ON THE USE OF HYDROCORTISONE (COMPOUND F) ACETATE OINTMENT, AND HYDROCORTISONE AND NEOMYCIN SULFATE OINTMENT

BEN KANEE, *Vancouver*

SINCE 1950,[1] we have known that adrenocorticotrophin (ACTH) could produce a temporary clinical and subjective improvement during its administration in atopic eczema. Similar results have also been obtained with cortisone in this and other diverse dermatoses. Local application of these hormones to the skin has, however, been ineffective and their continued oral and parenteral use carries the risks of developing well known complications. Hence the finding[2] that ointments of hydrocortisone (Compound F) acetate and the free alcohol are so promising topically in so many troublesome and trying types of dermatoses is most important and welcome.

In March 1953 a supply of hydrocortisone acetate ointment was made available for clinical trial and I can confirm the encouraging results reported by Sulzberger, Witten and Smith[2] in atopic eczema, lichen chronicus simplex, pruritus ani and vulvæ, and contact dermatitis as well as in solar (photosensitization) dermatitis. I found that in atopic eczema of limited involvement (cubital area, popliteal space, face and/or hands), it was extremely effective during its use, but that the eczema recurred on cessation of topical medication. A patient with pemphigus erythematosus[3] who had been maintained in good health since July 1950 on ACTH, is now being maintained equally well on alternating courses of ACTH and oral hydrocortisone (free alcohol). It was found that the use of hydrocortisone acetate ointment

controlled the pruritus. However, it did not enable this patient to reduce the previously established daily dosage of oral hydrocortisone (free alcohol).

Since July 1953 a series of 40 dermatoses, most of which were complicated by pyoderma (impetiginization and folliculitis), have been treated with hydrocortisone acetate and neomycin sulfate ointment. The following table summarizes the results.

TABLE I.

Diagnosis	*No. of cases*	*No. improved*	*No. unimproved*
Lichen Chronicus Simplex +Pyoderma	10	8	2
Dermatitis Venenata+ Pyoderma	4	4	
Atopic Eczema+Pyoderma (limited involvement)	10	10	
Pruritus Ani+Pyoderma	5	4	1 (after initial improvement)
Solar Dermatitis+ Pyoderma	2	2	
Aural Infectious Eczematoid Dermatitis+ Neurodermatitis	5	5	
Aphthous Ulcers	1		1
Blepharitis	2	2	
Membranous Stomatitis	1		1

The most striking and gratifying result to both patient and physician from the topical use of hydrocortisone acetate ointment in the above cases was the almost immediate relief of the pruritus. This was followed by clinical improvement with reduction of œdema and erythema within the first 12 hours, and becoming apparent clinically and subjectively within 24 hours. I have also observed that the ointment is best applied sparingly as a thin film two to four times a day, preferably during the daytime. The petrolatum base appears to be best tolerated.

The relief afforded to patients with pruritus of the anus, genitalia and vulva is best described in their own words—"just like magic"—and this observation holds true in many cases of lichen chronicus simplex. Regarding atopic eczema, a most trying and recurring disease, one feels that in topical hydrocortisone acetate ointment the physician has a most useful aid but not cure. Unfortunately the extensive and prolonged use of this ointment is not practical at present due to its great cost.

The efficacy and superiority of the antibiotic neomycin in dermatology is now well documented.[4] From one's limited observation it would appear to be a most useful if not necessary adjuvant to hydrocortisone acetate ointment, when the latter drug is indicated and the dermatosis is complicated by pyoderma. Bacteriological cultures in the above series showed the presence of *Staph. hæmolyticus* (*aureus*) and/or *Strep. hæmolyticus*, which were apparently readily susceptible to neomycin. There does not appear to be any evidence of systemic absorption of the hydrocortisone acetate from the ointment base. To date there has not been any evidence of sensitization from the topical use, hence this is one form of corticosteroid therapy that is free from risk in regard to systemic reaction.

SUMMARY AND CONCLUSIONS

1. In self-limiting diseases such as contact dermatitis, hydrocortisone acetate ointment appears to offer results similar to oral and/or parenteral administration of cortisone and ACTH without the risk of complications and, as a short-term plan of treatment, offers great and immediate relief to distressed patients and shortens the morbidity of the disease.

2. In atopic eczema, lichen chronicus simplex and idiopathic pruritic dermatoses, i.e., pruritus vulvæ and ani, hydrocortisone acetate ointment is a promising aid in management. Whilst this is not a cure, relapses are apparently brought under control by resumption of the topical therapy.

3. The addition of the antibiotic neomycin sulfate to hydrocortisone acetate ointment appears to enhance its efficacy in selected dermatoses complicated with pyoderma.

The 2.5% topical ointment of hydrocortisone acetate was generously supplied by Dr. J. H. Laurie of Merck and Co. Inc., Montreal and the hydrocortisone acetate and neomycin sulfate ointment (each gm. contains hydrocortisone acetate, 25 mgm., neomycin sulfate (equivalent to 3.5 mgm. neomycin base) 5 mgm., butylparahydroxybenzoate 1.8 mgm. and methylparaben 0.2 mgm.) was generously supplied by Dr. H. F. Hailman of the Upjohn Co., Kalamazoo, Michigan.

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THE RESERVOIR OF SYPHILIS

It has recently been estimated that there are still 2,100,000 persons in the United States who have syphilis requiring treatment, in spite of the apparent gradual disappearance of the disease. A useful technique for locating inapparent syphilitic infection is the serological survey. In 1952, a survey of 1,244 persons employed in small industries in North Carolina was carried out. The group, mostly of unskilled or semi-skilled labourers, was highly selective, but even so the figure of 181 cases of syphilitic infection revealed by the survey (139 previously treated) gives an indication of the size of reservoir. The high proportion of cases (32) with asymptomatic neurosyphilis is worth noting, as is the number (56) whose previous treatment was considered inadequate. (Lee, S. S.: *Pub. Health Rep.*, **69**: 319, 1954.)

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Editorials

DR. ROUTLEY'S RETIREMENT

From time to time one of our Annual Meetings acquires a more than ordinary significance. The 1921 meeting in Halifax for example will always be looked upon as one of the most momentous in our history; other conventions have witnessed definite stages in our growth; on three occasions the B.M.A. has foregathered with us. The Eighty-Seventh Annual Meeting just concluded was the occasion of an event of a more personal nature; Dr. Clarence Routley retired from the General Secretaryship of our Association. He has occupied this post since the famous Halifax meeting referred to; indeed we may say that his appointment then was one of the most valuable elements in the revivification of our Association, and one which continued to be of pre-eminent value in our development.

The tribute paid him at the Vancouver meeting was highly affecting. It could hardly be otherwise in the circumstances. We could not witness his withdrawal from active participation in organized medicine without a sense of deprivation not lessened by its having been definitely anticipated for some time; and he just as obviously could not but be deeply sensible of the termination of his main life work. He has of course been named President-Elect, a position which will ensure us yet further opportunity of his counsel; actually, in view of the forthcoming combined meeting with the British Medical Association, it will make heavy demands on his time, and even after this we shall still be able to draw upon his experience in a consultant capacity. But the fact remains that he now leaves "the very stream of his life, and the business he hath helmed."

Clarence Routley has served the Association faithfully and well, and has gained the high esteem of his many friends and colleagues. No man can do more or gain a higher reward. We are so familiar with his work for the organized medical profession that the perspective of time may be required for the full appreciation of his unique contribution. We shall only add what the entire body of our Association must sincerely desire him to have—long days of good health and happiness.

The Retiring Secretary's Message

TO MY FELLOW MEMBERS

Having retired from the office of General Secretary of the Canadian Medical Association at the Annual Meeting held in Vancouver in June, I cannot let pass this opportunity to express to my fellow members in every part of Canada my thanks and appreciation for the magnificent help and support which you have given to me as I have attempted to carry out my duties.

It was in 1918 when I returned from World War I that I first became connected with the Association upon my appointment as Secretary of the Ontario Division. In 1920 I became Associate Secretary to Dr. Scane, and upon his death in 1923 succeeded him in the office of General Secretary. For the next fifteen years I occupied the dual position of Secretary of both the Canadian and Ontario Medical Associations. In 1938 I went over full time to the C.M.A. being succeeded in the O.M.A. by Arthur Kelly. And now, sixteen years later, history is repeating itself once again, with Arthur Kelly succeeding me.

I could become nostalgic as the years pass in review and invite you to pore over a lot of history, but this is not the time or place to do that. Suffice it to say that I have seen the Association which at the close of World War I numbered a few hundred members and was moribund and bankrupt grow to a strong, virile organization of close upon 10,000 members with a reserve of more than a quarter of a million dollars.

But of more importance in my judgment has been the very real joy of seeing the Canadian Medical Association grow in prestige and esteem until today it can be said with assurance that it enjoys the confidence not only of the great majority of the doctors of Canada but also of a large number of the Canadian people.

It has been a privilege and an honour to serve you as General Secretary for such a lengthy period. In ways too numerous to mention you have showered me with courtesies and kindness, and each year and every year has been filled with happiness.

Fortunately for me, I am not severing my relations with the Association, as you have so kindly seen fit to ask me to serve you in a consultant capacity. I would like to think that in such a role I can still make some contribution to the aims and objects of our Association.

And may I, in closing, commend to you my successor, Arthur Kelly. In a high degree he possesses those qualities of heart and mind which eminently fit him for the post. I can wish for him nothing better than that at the end of his term of office he can look back—as I do now—to a delightful association with the followers of Hippocrates who are proud to say, "I will keep pure and holy both my life and my art."

T. C. ROUTLEY

MENTAL HEALTH

There is, apparently, little information on psychiatric morbidity throughout the world, figures varying from 1 in 10,000 for rural Africa to 3 in 1,000 for Western nations. It is of interest that there appears to be a higher provision for mental services in urban areas: but this should not come as a surprise as even the layman knows of the illnesses produced by the hustle and bustle of city life. The countryman, of whatever nationality, is a more contented and placid individual than his city brethren.

As a recent report of WHO* points out, the provision of more psychiatric beds is overemphasized rather than the need for positive mental hygienic prevention measures: "in the past too much attention has been given to the mere provision of further psychiatric beds and too little to the development of a real community mental health service." In the past the mental hospital psychiatrist spent his time in the hospital itself, today at least a third of his time should be spent outside the hospital in preventive and educational activities. The psychiatrist should be a citizen of the community primarily, and take an active part in the religious, recreational and governmental activities of the neighbourhood from which his patients are drawn. The report suggests that mass methods of approach to the community by radio or the popular press are less effective than lecturing to small groups of key individuals in professions and industry.

One of the greatest dangers of a mental health education programme is that it will produce a hyphochondriacal nation. The popular press is, to some extent, to blame for the bad effects of publicity. Vivid pictures are drawn of the inside dramas of the mental hospital, graphic descriptions of leucotomy and encephalography are made the focus of attention. On the radio, in the cinema and in the press "illness" is the theme song rather than "health." The mental aspects of home, family, school and marriage are more important than descriptions of some psychosis. The prevention of mental disease, as is true of all diseases, is the most important matter; prevention can only start at the beginning—the education of parents in the proper ways of bringing up children. A first class children's psychiatric service integrated with education of the parents appears to be one answer to the problem of psychiatric illness.

Mental health education should be integrated with other medical knowledge, and the efforts of voluntary workers, social workers and nurses are more important than the press or posters. In the application of a mental health programme psychiatrists working in psychiatric hospitals must not forget that 30% of patients seeking a doctor are suffering from a psychoneurosis; the closest liaison with the ordinary general practitioner in the neighbourhood is therefore of vital importance.

The report deals at length with the extramural treatment of mental illnesses. It draws attention to the need for out-patient facilities, particularly in child psychiatry. A more recent development in mental health treatment has been the provision of day treatment centres; here the patient suffering from psychoneurotic or mild psychotic illness may be treated without admission to hospital, spending the night at home and the day at

*Third Report of Committee on Mental Health, WHO, September, 1953.

hospital. The economic advantages and the financial saving on hospital costs are obvious, but the more subtle social and group-psychotherapeutic activities are advantageous too. The "club" spirit seen amongst patients with multiple sclerosis, poliomyelitis and geriatric diseases can also be fostered in relation to the mental hospital or day centre.

The committee sponsoring this work has interesting observations to make on the in-patient treatment—the mental hospital itself. "The most important single factor in the efficacy of the treatment . . . appears to be an intangible element . . . atmosphere. Too often the psychiatric hospital gives the impression of an uneasy compromise between a general hospital and a prison." The report continues with methods by which the "atmosphere" may be improved, especially the group activities of the patients themselves.

W.F.T.T.

THE ROYAL CANADIAN ARMY MEDICAL CORPS

We welcome the opportunity to refer to the commemoration of the 50th anniversary of the Royal Canadian Army Medical Corps. It is true that in a sense the association between our profession in Canada and military operations goes back much further than 50 years. The military flavour was introduced to the profession in Canada in the early 19th century with the many doctors who had been regimental officers with the British Army. The Riel Rebellion in 1885 called forth the first organization of medical services in the field; this was under the late Sir Thomas Roddick with Deputy Generals Ryerson of Toronto and Tobin of Halifax, but the Canadian Army Medical Corps as such was only created in 1896 with Colonel J. L. H. Neilsen the first Director General in 1898. Under him the Medical Corps was gradually built up. When the Boer War broke out in 1899 the organization of the medical corps did not permit of sending more than regimental medical officers at first, and it was only in 1902, about six months before the end of the war, that a complete Canadian medical unit, the Tenth Field Hospital, was ready to leave Halifax with Colonel A. N. Worthington of Sherbrooke in command.

It was under Colonel (later Sir) Eugene Fiset that the officers and personnel of the permanent medical service were banded into the P.A.M.C., and from then on there was steady expansion and growth.

Now the Corps can look back on the intervening fifty years of service and experience in two global wars, and as Brigadier Crawford points out it is a most appropriate time to think about military medicine of the future. The men in 1904 had their problems, but not even after World War I was it felt necessary to think in terms of international responsibilities which in effect would call for the continued services of Canadian troops both at home and abroad, and of course of Canadian doctors: and, unfortunately, there is little sign of those responsibilities becoming less onerous.

Canada occupies the unique position of being the only nation which does not have compulsory military service. It is just because we claim such a high privilege that we should be prepared to justify it to the fullest extent. Nor is the choice of a military career necessarily as great a sacrifice as it may seem in comparison with civilian practice. As Brigadier Crawford points out, even if the average pay of medical officers does not equal the average earnings of the civilian doctor, there are the very considerable compensations in the way of pensions and other advantages.

Military medicine does not necessarily narrow a man's outlook or deprive him of research in its widest sense. Some great names occur in the history of military medicine – Baron Larrey, Bruce, Ronald Ross, Billings. These men made their opportunities under conditions no whit more stimulating than in our day. And all through both Great Wars some few men in service always found time to contribute to medical literature. Certainly conditions in our Canadian Army make it easy for anyone who wishes to work up clinical problems.

We hope that Brigadier Crawford's appeal will be studied carefully by those who are making their decision as to what line of work to follow. He has stated the position fairly and the need is great.

SEAL FINGER

Attention was drawn to the curious condition called seal disease or seal finger (*Spekkfinger* in Norway) in a case report by Skinner in this Journal last year (*Canad. M. A. J.*, **69**: 155,

1953). This occupational disease of seal hunters has now been made the subject of a monograph by a Finnish physician, Yngve Candolin,* who with the characteristic industry of his race has succeeded in following up in the Baltic area 244 instances of this disease in 193 persons, and also in making a world survey of its incidence.

The characteristics of seal finger are the appearance of an intensely painful swelling of a finger, which runs a protracted course and is often associated with arthritis in a finger joint. The disease has a patchy geographical distribution. It occurs in Newfoundland, Labrador, Greenland, Spitzbergen, the White Sea and the Baltic, but not on the Pacific coast of Canada, although cases are reported from Kamchatka and the Pribilof Islands. It has rarely been seen in southern waters. There have been local epidemics; for example, 21 cases were reported from a Newfoundland area in 1949 and none the following year. In Norway, seal finger is a definite nuisance; on an average one man per boat per season is affected, and may be out of action for most of a season. For this reason, research has been undertaken by the Norwegian government into the etiology of the disease.

Of the cases studied by the author nearly one-half had some terminal disability. There was always a history of initial injury to the skin, and the peak incidence was in April and early May. The commonest incubation period appeared to be three to four days, after which intense pain set in, most commonly in the left middle finger or index finger, with exquisite tenderness, lividity or slight redness of the skin, and a spindle-shaped swelling. There was no fever, the erythrocyte sedimentation rate remained normal, and there were no signs of pus formation or involvement of lymph nodes unless secondary infection was present. Either at once or after two or more weeks, an underlying joint might be involved. The condition commonly took several months to subside, but the functional end-result was often surprisingly good.

The question of treatment is complicated by the fact that the sealer is usually far from medical aid. Pathological specimens showed a hard œdema leading to circulatory disturbances, without abscess formation or necrosis. The value of incision into the œdematous tissue is doubtful, unless it can be performed at the onset. In late cases amputation or joint resection should be delayed as long as possible, in view of the possibility of long-continued improvement. Waage in 1950 treated 20 cases with aureomycin with satisfactory results. The dose recommended is 250 mgm. every six hours for 12 to 16 doses, and there would seem to be some merit in the suggestion that sealing ships should carry a supply.

The causative agent of seal finger is unknown. It may be a micrococcus or a virus. A number of laboratories are interested in this question, and Candolin gives a list of persons (including Dr. Watkinson of the Department of Health and Welfare, Ottawa) who would be glad to receive material for study. It is clear that with the gradual decline in seal hunting the condition may gradually disappear and its etiology remain a mystery, as in the case of chlorosis.

Acta chirurg. Scand., Supplementum: 177, 1953.

Editorial Comments

THE PROBLEM OF PSITTACOSIS

A recent paper by Sigel *et al.*[1] brings forward evidence that psittacosis is again increasing in the United States. Not only has there been a great increase in the number of requests for psittacosis tests received by the Virus Diagnostic Laboratory of the University of Pennsylvania, but the positive findings are almost twice the total for the three preceding years. In addition there was another group, nearly as large, in which the disease was suspected but could not be diagnosed by the tests, possibly because of preceding antibiotic therapy.

Apparently this increased incidence of psittacosis has followed on the relaxation in 1952 of restrictions regarding the sales of parakeets. There can be little doubt that pet birds of the parrot family are the main source of the disease. It has increased with the increase in their traffic; most of the cases of psittacosis are amongst those who have owned, raised and sold them; and the virus has been isolated from the birds. The contact with the birds as household pets is of course fairly intimate. One patient said she allowed her pet to take her food from her mouth.

It is true that psittacosis is not the serious problem it used to be. The mortality has dropped to about 2% (Drachman) with the use of antibiotics. But it has unpleasant possibilities and the question of resistant strains of the virus is still

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not properly understood. Psittacosis is endemic in certain districts where pet birds are produced, and aureomycin is given to them before they are shipped away, but there is no proof that they are free of the disease then. There has been a great boom in the sales of these birds, and it has led to much indiscriminate distribution, some of the birds coming from outside of the States without proper inspection.

Apparently very few cases have occurred in Canada. Teney[2] in 1941 reported a series of 13 cases in Toronto, and stated that one fatal case had occurred "in Ontario." Of these 13 cases all but three were proven by the complement fixation test. They were treated with sulphapyridine, and there were no deaths. Pet birds were the source in each case.

Even if antibiotics do control the disease the matter of its control should still be kept in mind. In cases of a-typical pneumonia or other ill-defined respiratory infection the possibility of pet birds being a source should always be kept in mind.

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PSYCHIATRIC RECORDS

A recent letter in the *British Medical Journal** comments on an aspect of medical secrecy which deserves attention. According to the experience of the letter writer not enough precaution is taken in hospitals to ensure that confidential information about mental illness is protected from becoming common property. He quotes instances of unauthorized hospital employees having access to the files of psychiatric patients and of battening on the intimate details they contain. He himself during a stay in the hospital was told things about the other patients by his non-professional attendants apparently, which, as he says, "would bring joy to the heart of a professional blackmailer."

In the psychiatric field from a professional point of view, "no secrets are hid"—and quite rightly so—but the greatest care should be taken to protect them within that field. One precaution might be to use numbers instead of names of patients, just as has been done in the case of venereal disease in some hospitals. In any case, the protest referred to should make every hospital with a psychiatric service examine carefully its methods of guarding these records.

*British Medical Journal; Correspondence; 1: 820, Apl. 3, 1954.

Men and Books

CARL VON ROKITANSKY
(1804 - 1878)

S. S. B. GILDER, M.B., *Montreal*

IT IS HIGHLY IMPROBABLE that Hollywood will ever make a film about Rokitansky, in spite of the film-maker's predilection for the medical profession and for old Vienna. For Rokitansky's life was in no sense a sensational one. He was never short of money, his career was not interrupted by disaster, his progress to the heights of fame was smooth, and his marriage was a completely happy one. Perhaps because of these things, he has not attracted the attention of biographers to the same extent as some men of lesser stature. It is pleasing to find that he is not forgotten in his own city, for in a recent number of the *Wiener Klinische Wochenschrift* commemorating the 150th anniversary of his birth leading members of the Viennese medical profession pay tribute to him as a pathologist, as a leader in the Medical Society (Gesellschaft der Aerzte) of Vienna, as an academician, and as a man. It is right that we should not forget him, since, although it is true that Virchow built up the imposing structure of modern pathology, he built it on the firm foundation laid by Rokitansky.

Carl Rokitansky was born in Königgrätz on February 19, 1804. He came of a well-established family who lived in what is now Czechoslovakia but was then a part of the Austrian empire. His father, Prokop Rokitansky, was an industrious district commissioner; his mother came of immigrant Irish stock. Young Rokitansky early showed a thirst for knowledge and in 1818 went to the University of Prague to study philosophy, this being the usual preliminary to a course in Medicine. He started medicine in 1822, though he was almost diverted from this to a career in philosophy and linguistics by his admiration for Bolzano, the most outstanding teacher of philosophy in the empire. It is interesting to note that to the end of his days Rokitansky was more proud of his accomplishments in philosophy and in anthropology than in pathology—a view not shared by posterity.

The teaching of medicine at Prague was apparently not very inspiring, and in 1824 Rokitansky transferred to Vienna, where he graduated in 1828 with the thesis *De variolide vaccinica*. As a student, his interest in morbid anatomy had been awakened by reading the works of such authors as Lobstein, Meckel and Andral, and he was firmly resolved to become a pathologist rather than a clinician, having seen only too clearly through the cloud of fine words with which the physicians of his day were accustomed

to cloak their ignorance. He referred to medicine as "an aggregate of doubtful principles, the prey of speculative philosophers and of hazard." Yet it is incorrect to assume that his lack of desire for medical practice was associated with lack of interest in humanity, for throughout his life he was constantly aware of the need to combat suffering and of the part which he was playing in this battle.

To appreciate the revolution which Rokitansky brought about in medicine, some knowledge of the state of affairs in Vienna in the year of his qualification is necessary. The first fine flowering of Viennese medicine had withered away; the flower of morbid anatomy had scarcely bloomed at all. When Rokitansky on qualification accepted the unpaid post of prosector in the morbid anatomy institute—little better than a hut in a corner of the grounds of the General Hospital—he was attaching himself to an institution whose recent history inspired no particular confidence. There had been an excellent man there, Alois Vetter, but the indifference of the profession had forced him to leave Vienna and accept a post in Cracow. When he left, morbid anatomy was simply entrusted to a museum servant for eight years. In 1812, Biermayer took over. He was a capable man, and some of his preparations are still present in the museum, but he encountered such opposition that he eventually took to drink, got into debt, and was finally suspended from duty in 1830. His successor, Johann Wagner, is sometimes regarded as the man who set Rokitansky's footsteps in the right path, and indeed in the two years of his incumbency before his death at the age of 32 Wagner certainly accomplished a great deal, but the truth is that he was not quite talented enough to bring morbid anatomy into its own. Rokitansky had little to learn from Wagner, who did however have the wit to recognize the value of his assistant.

The reason why Wagner, like his predecessors in Vienna and his more celebrated contemporaries in Paris, did so little to advance pathology was that he had failed to grasp a fundamental truth—that clinical medicine must be based on an accurate knowledge of pathology. Instead of this, it was the custom at the time to try to explain pathology in terms of clinical findings, to prefer speculation to accurate observation in the deadhouse or even to ignore altogether the post mortem findings. Rokitansky's great service was to gain acceptance of the view that the autopsy room and not the ward is the temple of truth.

Wagner made Rokitansky a paid assistant in 1831. On Wagner's death from tuberculosis in 1831, Rokitansky succeeded to his teaching post, and was appointed extraordinary professor in 1834. It is however an indication of the suspicion with which morbid anatomy was still regarded that his appointment was at first only for four years. In 1844 he was appointed ordinary professor, and pathology had come into its own at last as a compulsory subject. From then on, the flow of honours continued steadily. In 1848, Rokitansky was elected to the Academy of Sciences as one of the very first three medical representatives, and became Dean of the Medical Faculty by open election in 1849. In 1850 he started a 28-year presidency of the Medical Society of Vienna. In 1853 he became *Rector Magnificus* of the University, and ten years later, the Emperor appointed him medical adviser *(Medizinalreferent)* for culture and instruction. Following his long service to the liberal party, he was made a life member of the Imperial Council in 1867. The list of foreign honours is a long one. A great event in his life took place in 1862; a visit of German doctors and natural scientists to a Vienna Congress shamed the Empire into the realization that Rokitansky's quarters were a disgrace to Austrian medicine and led to the opening in 1862 of a fine new Pathology Institute, dedicated to research into the sites and causation of disease.

His family life was a happy one. In 1834 he married a very gifted woman, Marie Weis, who gave up a promising singing career to marry him. She transmitted her musical talent to her first sons, of whom Hans became a bass at the Court Opera and Viktor a professor at the Conservatory. Fittingly, the other two sons took to medicine; Karl became an obstetrician and Prokop a popular general practitioner.

In his old age, Rokitansky was greatly bothered by bronchitis and coronary pain. He died quite suddenly early on the morning of July 23, 1878, after an attack of anginal pain. It is ironical that the man who in his life had performed more than 30,000 autopsies went to his grave without a post mortem examination, because everybody forgot about it.

What were the factors which brought to Rokitansky such a remarkable amount of recognition in Vienna in an age when professional jealousies ran high, and also abroad as attested by the crowds of foreign medical men who visited him? In the first place, his work was accurate. He had a gift for exact observation, and for clear exposition, though he was apparently much readier with his pen than with his tongue. His autopsy reports also show that, unlike many men, it did not take long for the distinguished pathologist to reach the heights of his powers. His first published papers are of as high quality as the rest.

The volume of work achieved by him was prodigious. The semi-military discipline of the huge General Hospital ensured the appearance in his autopsy room of the cadaver of every patient who died there. His first autopsy report was written on October 23, 1827, and his thirty thousandth in March 1866. His published papers cover a wide range of medical, surgical and obstetrical subjects, and his name keeps turning up in all sorts of odd corners of medicine. He wrote, for example, on intestinal obstruction by internal hernia and bands, on spontaneous

rupture of the aorta, tracheal diverticuli, double uterus, the reciprocal influence of disease processes, perforated gastric ulcer, spinal deformities, dysentery, changes in size and shape of the liver, ossification, goitre, cysts, neuroglial proliferation, and cardiac septal defects.

His best-known work is his *Handbook of Pathological Anatomy,* in three volumes, which appeared in 1846. Unfortunately, Rokitansky in the first volume – on general pathology – was tempted to wander from the solid ground of post mortem observation and to invent a theory to explain the fact that a number of persons died apparently without any local naked-eye signs of disease at all. In such cases, the author assumed that the cause of death must lie in some chemical change in the universal tissue, the blood. History has shown that there was a germ of truth in this theory of dyscrasias, but it drew forth a vicious attack by Virchow. The greatness of Rokitansky is shown by the fact that, instead of entering into a fruitless controversy, he acknowledged the justice of Virchow's criticisms by quietly deleting from his next edition the offending parts. Virchow's remarks have been erroneously taken by some to imply disparagement of the whole book. This is quite wrong, for Virchow, whose admiration for Rokitansky as "the first real descriptive pathologist" was unbounded, warmly praised the Handbook in 1895 and stated that it was still unsurpassed as an account of pathological anatomy.

Rokitansky was in no sense an "ivory-tower" pathologist. He was always eager to use post mortem observation as a means of evaluating symptoms and signs. In this, he had the advantage of not doing any clinical work himself. Most previous pathologists were also clinicians and followed their own patients to the autopsy room, and had therefore tended to make the post mortem findings fit into the clinical framework. Rokitansky's fruitful collaboration with Skoda the internist, Hebra the dermatologist, and Schuh the surgeon is well known, and may be said to have been the forerunner of the modern clinico-pathological conference.

It is true that much of Rokitansky's work was accomplished with the naked eye, but he did make considerable use of microscopy after 1839, and he was acutely aware of the need for chemical pathology and experimental pathology, for which subjects he made provision in planning his Institute.

Lastly, his work outside the autopsy room and the museum must not be forgotten. Coming to the Medical Society of Vienna as its President in 1850, he found the society in poor shape, with little money and a small membership. He increased the membership, cajoled money out of the Government, raised the scientific level of the society, and put the Journal of the Society on its feet.

He was elected to the Academy of Sciences in 1848 as one of the first three representatives of medicine, and was able in this sphere to contribute a number of papers tending to foster good relations between medicine and allied sciences. Thus, in his address in 1858 he put forward a plea for the integration of medical science with natural sciences, especially in relation to research. Aware that the solution of medical problems is easier if they are approached from a purely scientific angle—a revolutionary thought at that time—he even suggested comparative study of animal behaviour, stressing the essential unity of phenomena of life throughout the animal kingdom. He would certainly have approved of the work of his compatriot, Konrad Lorenz, a century later. In 1870, incidentally, he became the first president of the Anthropological Society. In 1863, Rokitansky published two essays on university organization. In the first, he expressed his conviction that a university should have a complete range of faculties and that all the universities in a country should be of uniform standard (foreshadowing medical school accreditation). In the second, he emphasized the double role of the university in training and research.

The aggressive, pontifical figure of Virchow has overshadowed that of his modest and kindly Viennese contemporary. It would perhaps be more accurate to regard Rokitansky and Virchow as the twin pillars of modern pathology. Without Virchow, Rokitansky would still have flourished; without Rokitansky, Virchow would scarcely have attained his present fame.

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ASEPTIC MENINGITIS

The term aseptic meningitis refers to an acute meningitic process without the presence of bacteria in the cerebrospinal fluid and without local parameningeal infections (otitis, trauma, sinusitis, etc.). Adair *et al.* have reviewed 854 sporadic cases of acute aseptic meningitis occurring during an eleven year period. Approximately nine per cent were caused by lymphocytic choriomeningitis and 12% by mumps virus: during the last two years of the study facilities were available for listing herpes simplex virus and the leptospiræ, these forming five and seven per cent respectively of the cases tested in these years. The authors comment that no etiological diagnosis was made in about three-quarters of the cases: some of these might have been non-paralytic poliomyelitis the diagnosis of which will in future depend on the development of newer techniques. A wide variety of other diseases may produce aseptic meningitis: lymphogranuloma venereum, glandular fever, infection with the Coxsackie group of viruses and possibly allergic conditions. The prospect for diagnosis in the future will depend on newer diagnostic methods. Adair, C. V., Gauld, R. L. and Smadel, J. E.: *Ann. Int. Med.*, **39**: 675, 1953.

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MEDICAL ECONOMICS

THE DOCTOR LOOKS AT THE COST OF ILLNESS*

WALTER DE M. SCRIVER, B.A., M.D., C.M., F.R.C.P.[C], F.A.C.P., *Montreal*

[*When unjustly accused of extortion, the medical practitioner sometimes finds it difficult to marshal the facts in his defence, even though he is convinced that the accusation is false. The address by Dr. Scriver reproduced below will help the doctor to clarify his thinking on the economics of clinical practice.*—EDITOR.]

IN A RECENT PANEL DISCUSSION at the Montreal Medico-Chirurgical Society it was my duty to review the doctor's role in the cost of medical care. This I shall do again, but before commencing it is only fair that I should review certain other factors. You will note that the subject is limited to the cost of medical care, which is but a fraction of the problem of the cost of health. This would involve discussion of nutrition, housing, clothing and sanitation, etc., matters which might well be classified as preventive services: prevention is most important, and if properly carried out will reduce the cost of medical care by reducing the occurrence of illness. We have only to think of typhoid fever, which not so many years ago attacked large numbers of our citizens with an illness that incapacitated them for many weeks, during which they required careful nursing and medical supervision, whereas today typhoid fever is such a rarity that many of our students go through their whole medical course without seeing a single case. Certainly the measures that prevent the occurrence of typhoid have reduced the cost of medical care and the same is true of many other diseases.

But apart from this what is agitating us all is the cost of illness, the costs for personal care if one should become ill, costs which have increased steadily over the years, but so have most things of life. Nevertheless we all realize that illness can be a financial catastrophe, and no one is in a better position to see this than is the doctor. Arising from this fact a question that has often been asked is "What are the doctors doing about the high cost of medical care?"

For the past 25 years the doctors themselves have spent much time and thought on this problem of the cost of illness, and continue to do so. When I made this statement a short time ago I was questioned as to the exact time, and on looking it up was relieved to find that this is the 25th year that the subject has been considered by the Canadian Medical Association.

It is my personal belief that the costs of incidental and minor illness or accident requiring medical services such as a few office consultations or home calls by the doctor should be budgeted for in the family expenses just as are the rent, repairs to the radio, or amusement. What we all fear is catastrophic illness, the case where we may require prolonged medical care, whether at home or in hospital, with high costs for nursing, doctor's fees, medicines, operating rooms etc., extending over many days and necessitating a prolonged convalescence, during all of which time we will not only be spending a large amount of money, but will also have little, if any, income. Such an illness will ruin any budget and must be paid for out of savings or by borrowing.

After deep and prolonged study of all aspects of these problems the Canadian Medical Association has concluded that while obviously such catastrophic expenses cannot be completely avoided, just as obviously they can be mitigated by insurance coverage in one of the voluntary plans even as the owner of an automobile can lessen the bill for repairs after a severe accident by holding insurance coverage for such a contingency. To this end each of the provincial divisions of the Canadian Medical Association either administers or sponsors such a voluntary plan. On the other hand, our voluntary prepaid medical care plans have demonstrated that subscribers desire the broadest coverage, and if we are to provide an alternative to a state scheme, possibly the minor as well as the major contingencies should be provided for, which of course would necessitate an additional premium. The Canadian Medical Association believes that those who can afford to should pay the insurance premium themselves, whereas the premium for indigents should be advanced from a governmental source. Perhaps in this respect I might be permitted to quote from a speech attributed to Lincoln:

> "You cannot build character and courage by taking away a man's initiative and independence. You cannot help men permanently by doing for them what they could and should do for themselves."

It is of more than passing interest that the Government of Australia has just adopted a plan along these lines, with the avowed intention of keeping the government out of the practice of medicine and at the same time providing medical care for the public while giving them some share of the responsibility for the provision of that care.

It has been frequently claimed by certain elements that the doctors themselves are responsible for the high cost of illnesses, in that they charge too high fees; and that there is proof of this in the income tax returns, where "the doctors" stand in the first four groups, along with the engineers, the architects and the lawyers.

You will note that I have used the words "the doctors"; if you speak to the average patient he

*Address delivered to the Rotary Club, Montreal, Tuesday, March 23, 1954.

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will probably admit that his own doctor's charges are reasonable; but the profession as a whole is blamed even though it is made up of individual "my doctors"; as is always the case it is easy to go from the specific to the general.

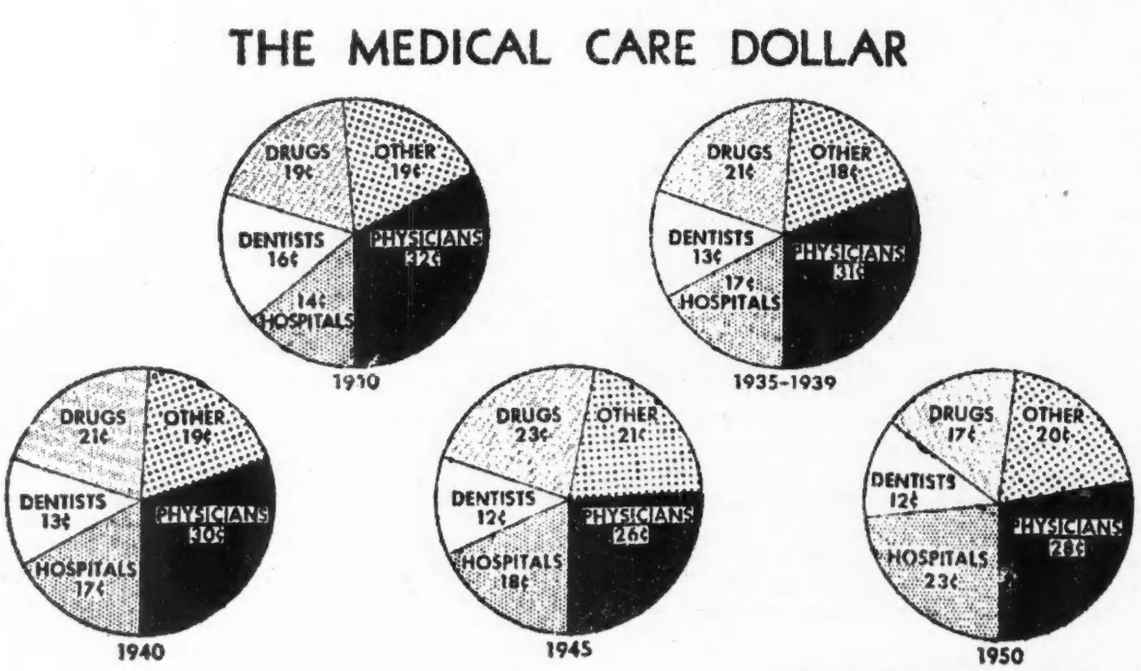
It is true that the doctors stand high in income tax returns, but how many people stop to think how very few are the years in which the doctor earns his maximum income after a long period of expenditure on training and a long period of slow progress, and followed by a period of diminishing returns. Perhaps the best answer to this statement is by a question: "Yes, but how many doctors leave an estate of any magnitude when they die?"

I am sure that you would be interested to hear of a survey recently made in one of our provinces over a two year period where it was shown that 20% of the doctors' estates were so small that there was no succession duty exacted whereas the majority of the remainder were less than $25,000. Only 2% exceeded $100,000. and in these cases it was definitely shown that most of the capital was derived from sources other than the practice of medicine.

Actually the doctor's share of the total money spent in medical care represents less than 30%, and is lower now than it was 20 years ago. I was unable to obtain in time the figures from the Dominion Bureau of Statistics, but am informed that they parallel closely the figures from the United States survey of current business in 1951, which is shown in the diagram (Fig. 1). In this you see the whole circle representing 100% of expenditures for medical care. You will note that in 1930 the physician received 32 cents of the dollar so spent, the dentist 16c and hospitals 14c, whereas in 1950 the physician received 28c, the dentist 12c (4c less each) and the hospitals 23c (9c more).

The second diagram from the United States Bureau of Labour statistics, and again parallel to our own, illustrates most graphically how the doctor's fees have failed to keep pace with the consumer's price index which rose from 100 in 1940 to 166 in 1950, whereas the physician's fees rose from 100 to 140 over the same period of time and hospital rates from 100 to 237 (Fig. 2).

With these figures in mind it should be unnecessary for me to point out, except to emphasize the fact, that the doctor's fees bear a very small part in the increased cost of medical care.



(Bureau of Medical Economic Research, American Medical Association)

Fig. 1

The doctors are also interested in the figures for selected consumer expenditure over the period from 1930 to 1950 as published by the *Survey of Current Business* in 1951. Here total costs of medical care have risen from 4.1 to 4.4% of the total expenditures; of which the doctors' share has fluctuated from 32 to 28% of the total cost; for those who claim a special dispensation for expenditures on medical care, it is of interest to note that over the years the expenditure on recreation averaged 5.5%; on tobacco 2.4%; on alcoholic beverages 5.1%; but possibly these last two items might be considered by some just as necessary to the full life as is medical care; however the state does not provide them but on the contrary taxes them heavily.

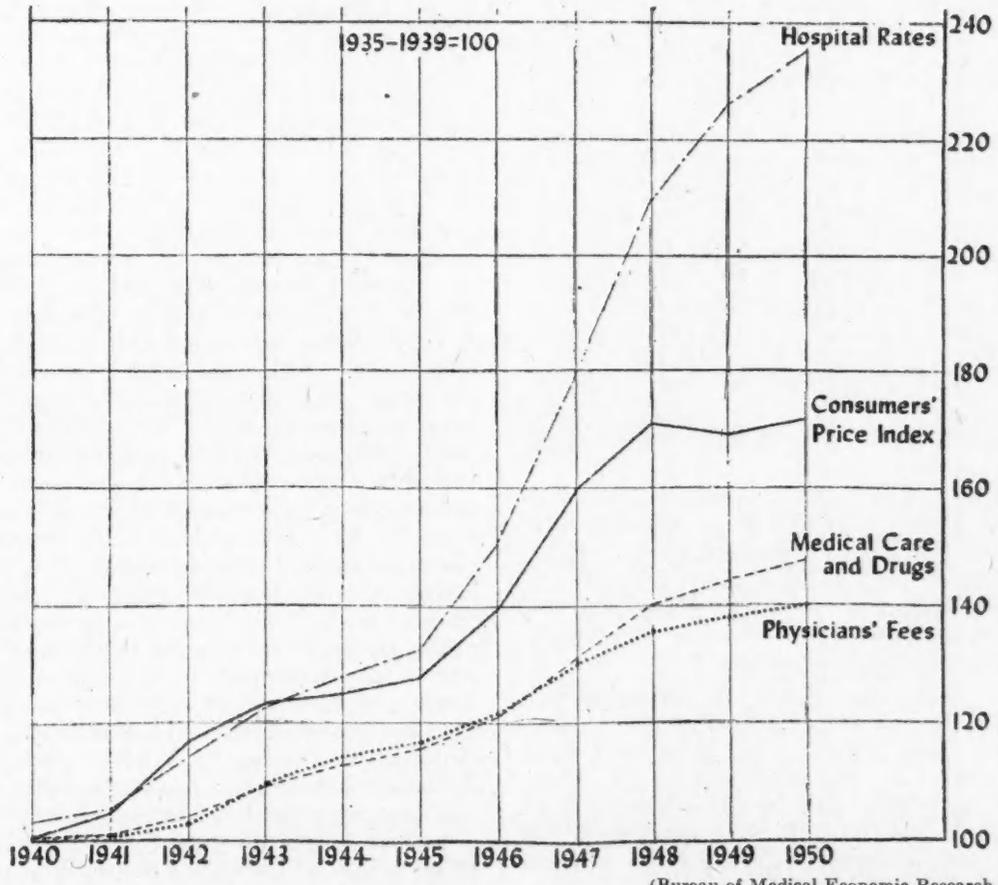
I admit that the average doctor's income has increased over the past few years, but this is due not so much to an increase in the individual fee, as to the fact that in these better times a larger percentage of patients pay their bills than did so 10 and 20 years ago. I need hardly remind an audience like this of the large number of uncollectable accounts we all had during the depression days, and how much better collections are at the present time. It must also be admitted that the average doctor's working week is made up of many more than the 40 hours now so prevalent in industry; the most recent survey gave the majority at 60 hours, and in all fairness we should agree that he who works the longer hours should receive proportionally greater remuneration.

Actually the schedule of medical and surgical fees in this province is set by the College of Physicians and Surgeons and in theory represents the fee for average service to the average patient of average means; for countless years it has been the practice of the ethical physician to adjust his fees to the circumstances of the patient.

Unless the doctor be richly endowed, or on an adequate salary, his fees must, even as in business, produce sufficient revenue to cover his running expenses, including office rent (and my own for example has gone up 300% in the past 12 years), office staff, supplies, transportation, etc.; in addition he should also make fair living expenses, provide funds for his ultimate retirement, and carry sufficient insurance to cover the capital investment of his special training; as well as funds to pay off this capital investment.

How many of you realize that as a professional man, self-employed, the doctor must arrange his own pension scheme and unlike the salaried man, who usually has part of the pension funds contributed by the organization by which he is employed, he must pay the whole premium himself? Here again he is at a disadvantage, for whereas the employee is allowed to deduct from his taxable income these premiums up to an amount of $900 per annum and his employer can claim a like amount, so far the professional man has failed to obtain such an allowance from the taxation authorities, which means that his pension or annuity costs him proportionately more.

Another statement made often without thought, and sometimes with malice, is that the



(Bureau of Medical Economic Research, American Medical Association)

Fig. 2.—Indexes of prices of physicians' fees, hospital rates, medical care and drugs and the consumers' price index, 1940-1950.

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doctor thinks only of the financial reward from the practice of medicine. To answer this we should analyse the ways in which he gives his services and the sources of his income. In general these services to the public fall into two main groups, those for which he collects a fee or receives a salary, and those given freely, with no expectation or hope of financial returns.

In the first group we should include office consultations, home and hospital visits, and any salary received for medical services in industry. In the second group we include services given without remuneration, in the hospital wards and outpatients services—parenthetically it is always a surprise to the doctor to learn that the public as a whole believes that he is not only paid, but well paid for these services. In his practice too, there is always the indigent patient to whom the doctor will give his services without charge as a voluntary act, and those who do not pay their bills or who ask for a reduction on the total. One would not expect the grocer or landlord to waive or reduce substantially his bill because his customer has been ill, and yet I am sure that there is not a doctor in this city who has not had such requests made to him, not necessarily in the presence of overwhelming disaster (in which case the physician has already made a voluntary reduction), but by the patient who on general principles feels that the doctor's services are not measurable in mere monetary value, and so the request of a reduction from him is quite a different proposition from asking others for similar treatment.

The doctor again frequently takes his place in community activities by acting on school or hospital boards and other organizations and he is actually out of pocket when, as is usually the case, he is honoured by being placed in the "special names" group of the many campaigns for funds for charitable purposes.

A further complaint is that the doctor spends too much on his overhead and so has to charge high fees to keep ahead of the game. The running expenses of the doctor are far from negligible, his office must be more than a bare workroom, and he must have a good staff, be it one or more persons to carry on the routine work behind the scenes. He must have some means of transportation to visit patients in their homes, and while a very few may have a top priced car and even a chauffeur, the average doctor is content to drive his low priced car himself. It is interesting to note that our income tax assessors consider 30 to 40% or even more of the gross income a fair allowance for the expenses of practice.

All told, considering the overhead, the average fee is reasonable; if to this we add the capital investment in the training of the doctor (and such a study has been most carefully carried out and published by the British Columbia division of the Canadian Medical Association) his fees would be found to be actually too low, according to the standards of cost accounting.

All of this is well summed up in an article by R. Scott White in the Business column of *Saturday Night* of March 6 of this year:

> "Two generations ago the professional man occupied the most secure place in the economic order. Today young men after a long and costly training period, frequently have to be urged to face the haphazards of early professional life. It is much easier to be swallowed up in the corporation with its enticements of security and short hours.
>
> There are, of course, compensating factors for the man who takes the plunge—doctor, lawyer, architect, engineer. He has the satisfaction of achievement, higher earnings and independence. But he faces the fact that he hasn't the same 'security' as that of his counterpart in industry."

But enough for justifying the doctor's fee, which as we have shown is less than 30% of the total cost of illness. The doctor can do and actually does a great deal to cut down these total expenses. How many of us physicians here have not heard, under the emotional stress of serious illness, the request from the relations of the sick one to spare no expense in his treatment, and how often later on when the bills come in have we not had from the same relations protests at the costs that have piled up? The understanding doctor, realizing the financial strain of the illness, will try to point out, often to be overruled, that such and such investigations or measures of treatment which frequently have been suggested to the harassed relations by poorly informed but well-intentioned friends, are not only unnecessary, but a source of unnecessary expense. In certain cases the doctor can also suggest that accommodation in less luxurious quarters, such as the ward instead of a private room, will not interfere with the treatment or progress of the sick one, or that special nurses at this stage of the illness are a luxury not a necessity in the treatment of the disease condition itself; yet at times his advice is not accepted, because the emotions and not reason dictate the decision; and when the large size bills finally arrive, it is again the emotions and not reason that are activated by the receipt.

In less severe illnesses the patient himself is often to blame for the unnecessary expense because of attempts at short cuts. He makes a diagnosis of his own condition and then consults a "specialist" in that particular ailment, frequently to find that he has chosen the wrong specialist and must be referred to someone else. Like his seriously ill brother he may also insist on unnecessary and costly procedures, all of which cause the bill to rise.

In conclusion let me say that no one has a better opportunity than the doctor to see and know the high cost of illness, and no one is more anxious to find the best means of keeping it down. But the doctor also realizes that while there are certain unavoidable minimum expenses connected with illness, in many cases excess

costs are piled up by the desire of the patient or his relatives for a luxury that is not a necessity in the treatment of the disease condition itself; the wise physician can frequently restrict and direct this tendency, and so save some of the expense that might otherwise result.

Very few if any of you would drive a car without insurance protection; you take partial coverage because you realize that complete coverage is naturally very expensive, and if you have an accident you pay the difference, yet because you are caught in an accident with no coverage at all, or with insufficient coverage, you do not go running to the government demanding that you should be covered by the state. Let's be realistic about so-called health insurance and insist that it shall be insurance, preferably in the voluntary plans; the government, however, as in Australia could pay the premiums for the indigents, and even encourage the individual subscriber by matching his premium subscription if necessary, in order to give him greater coverage.

However, there is a realm where the government should have very definite obligations, and that is to create facilities for the maintenance of the health of the individual, for example protection against typhoid fever, as mentioned before, immunization against diphtheria, the removal of open cases of tuberculosis to treatment beds, and research into the less understood forms of illness. I could easily go on adding to this list.

The problem of the costs of medical care is still with us and the more we study it the more we realize its complexity, and the fact that there is no easy and complete solution.

You have heard today a brief outline of only one of the many parts that enter into it; if you are interested, as a group of this nature should be, you should hear more, concerning other aspects—from the hospital directors about the factors that influence the ever increasing costs of hospitalization, and from the insurance experts about the principles that must be observed to give adequate coverage and yet keep the plans solvent, but above all you should appreciate that during illness there are many intangible factors which cannot be met on a cost accounting basis and there are many facets of human nature which are in evidence at no other time. The more you know about this problem the better you will be able to judge the proposed measures for alleviation and the better you will be able to pick out those which are motivated solely by political expediency from those which take into consideration all the factors involved in a sincere attempt to produce an answer which is best for all of us that make up the general public. Mr. President, ladies and gentlemen, I assure you that not only the doctors before you today, but the whole medical profession is anxious to find a just and workable solution to this complex problem.

MEDICO-LEGAL

WHY KEEP RECORDS?

T. L. FISHER, M.D.,* *Ottawa*

AMONG MEDICAL MEN as a whole there is general acceptance of the fact that ordinarily careful, competent, scientific practice of medicine is impossible without records. In the management of day-to-day practice also records are a necessity. As a general rule the better the records the better the practice and vice versa. The records should contain a history which is an adequate summary of the patient's complaints, and in many cases a patient's diagnosis of previous illnesses should be checked by a review of the outstanding symptoms and these should be noted; physical examination should be reported fully, pertinent normal findings as well as abnormalities being reported; at some later time it may prove very valuable to have summarized the steps in diagnostic thinking. Treatment given or advised should be noted in sufficient detail, for example, in the case of wounds it sometimes saves trouble to note the number of sutures put in and later the number removed, while in medical cases not only the drugs prescribed but their dosages should be specified; any other information pertinent to the illness under consideration should be noted. How valuable some of these pertinent, but not necessarily medical, facts may prove is shown by the following case.

In the summer of 1951 a surgeon on duty in the emergency department of a large general hospital was called upon to treat a laceration of the sole of the right foot which, it was reported, had been produced by a piece of glass. The wound was examined, a search made for extraneous matter and none was found, so the wound was sutured. The patient was told to report to the hospital or to his own doctor if there was any trouble and, in any case, to report in five days to have his sutures removed.

At the hospital it was apparent the patient had been drinking; he was hard to handle and refused to accept some advice given. On the outpatient record written at the time, in addition to the surgical information, a note was made, "Told to report to own doctor if any trouble or return to me immediately. This man was under the influence of alcohol and was uncooperative."

Nothing was heard of the patient again until early September when the surgeon received a lawyer's letter informing him that the patient had been unable to return to work for nearly a month, that he had had to leave work a week later because of pain in his foot which continued for two weeks until a hard node appeared which, when removed, proved to be a large piece of

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glass. Another week was lost from work. The lawyer informed the doctor that "You are to be held liable in damages for the negligence which you displayed in failing to discover the large piece of glass which was embedded in our client's foot, and in failing to remove the same. . . Our client will accept $500, but if this is not paid, you will be sued without further notice."

When the doctor refused to consider any settlement a writ was issued. Preparations for defence were begun immediately and the case was to have been heard in January or February of 1952. Examinations for discovery actually were held and, of course, the completeness of the surgeon's notes must have been evident. Presumably for that reason, in February when the case was to have been heard, the plaintiff offered to dismiss the action without costs. A formal order was made then by the court dismissing the action without costs.

There can be little doubt that the addition of information which, while not directly related to the treatment of the wound in the foot, was pertinent to the management of the case, played a most important part in persuading the plaintiff that his claim would not stand and was responsible, therefore, for sparing the surgeon the time and strain of an actual trial.

MISCELLANY

WHAT IS WRONG WITH MEDICINE*

R. LANE FORSYTH, M.D.

[*We have put this title to a valedictory address by the past president of the Cape Western Branch of the Medical Association of South Africa. Its modesty, sincerity and insight make it well worthy of reproduction.*—EDITOR.]

. . . In the course of the past few weeks, I have put to myself and to many others whom I have met, what I think is a very pertinent question, "If I had my life over again, would I take up medicine as a career?" Those who know that they are in the only job that could ever have satisfied them are in a happy position, for medicine has rewarded them according to their needs both intellectual and material. They are complete persons and are living a life of fulfilment, and they will not need any of the remarks which may be made in this address. However, there were very many who gave me an emphatic negative, many who expressed doubt, many more who gave a qualified "yes" to my question, and many who said they were glad that their sons had decided *not* to enter medicine. I have felt that if one could find the real reason why many of my seniors, some of my contemporaries and even some of my juniors were not really enthusiastic about their calling, one would have gone a long way towards getting the answer to the perennial question "What is wrong with medicine?"

It is extremely difficult in retrospect to say what factors influenced us in the selection for ourselves of medicine as our life's work. For some the motivating force may have been, like my own, a family tradition. For some it may have been a mere accident. For some the long period of study was a challenge to the mind. The mysteries of medicine probably excited the romantic. Some may have seen in medicine opportunities for expressing a sympathetic nature. Some may have had an inborn yearning to be needed and saw in medicine a chance of this desire being fulfilled. However varied the reasons may have been, there is no doubt that one and all looked upon it as a profession honoured above all others—one which brings us into warm personal contact with our fellow beings—one which gives us opportunities to use the heart and its sympathies as well as the head, to help others who are unable to help themselves.

It is true to say that few, even of those who were living in a medical environment and should have had knowledge of these things, gave a thought to the long hours of toil which were going to be demanded. If we did, the fear of hard work did not deter us. And I vouch that no one thought of medicine as a trade or business. I am sure that prospects of material rewards played little part in our earliest choice.

THE CONSTANCY OF MEDICINE

In its essentials, nothing has happened to medicine that should make us inconstant or unfaithful to our early decision to join the throng of great people who were associated with our ancient art. There are still sick and suffering needing the help that only doctors can give—sometimes in the form of a drug, sometimes some sound advice on how to live, sometimes an operation, and only too often a mere word of comfort and understanding. The opportunities are still there for sharing in the joys and sorrows of our fellow men; the challenge to our abilities, humanities and resource still remains.

Nor is this a dull profession—it is a very living craft. New discoveries in all its branches afford the devotee an ever-increasing interest. Improvements in clinical methods are changing guesswork into certainty—and the knowledge that at the end of the search one has arrived at a correct interpretation of the signs and symptoms of an obscure case, should give the added satisfaction that comes with diagnostic triumph—the critical congratulations of our own consciences that are worth so much more than the smile of princes or the felicitations of flatterers.

So if perhaps you will allow that there is nothing much wrong with medicine *per se*, and that its appeal should grow with familiarity, you will concede that there is something wrong either within ourselves or in the manner in which we are practising our art.

CAUSES OF FAILURE

I believe that many of those who have decided that, after all, medicine is not really the career for them, say so because of a sense of failure to adorn the profession to which in the enthusiasm of youth they felt they were going to add lustre. These are probably people with the highest ideals and the highest standards of service, and the realization that they have failed to attain the unattainable is grievous unto them, and the feeling steals over them that they would probably have done better in another occupation—all the time failing to appreciate the fact that one does not need to be famous in order to be great. In our contacts we can be instruments of the greatest value, bringing faith, hope, light, joy and consolation, where previously there was doubt, despair, darkness and sorrow.

*Slightly abridged: the address appeared in the *South African Medical Journal*, March 20, p. 245, 1954.

I believe that in other cases, the blood has run thin as a result of years of work and worry. Overwork plays little part in fatigue. It is over-worry that is the trouble in most cases. Much professional over-worry comes from a lack of knowledge—a feeling of uncertainty, a sense of unfitness to deal with the problems of practice. This sense of incapability not infrequently follows as a result of insufficient reading and time given to study. Osler points out that the habit of study for its own sake is created in the first few years after qualification—during that period of inaction waiting for a practice to build itself. If it is not developed then, in 10 years after qualification the practitioner will be dead mentally as far as medicine is concerned and he will look elsewhere for his real interest—horses, farming or the stock-market. If one feels that one is deteriorating in this way, a period of attendance at postgraduate clinics may revive the failing spirit and recharge it with enthusiasm so that one again experiences the pleasure to be obtained from our first love. The love for our art only dies when its power of delighting us ceases.

Refresher Courses

It is more than necessary that our universities should provide refresher courses for practitioners. Weekly ward-rounds open to graduates only should be part of our routine contributions to those whom we have turned out—a thousand-mile service at no extra charge so to speak. The advantage will not be unilateral, for our teachers will get a clearer idea of the needs of those who are in the forefront of domiciliary medical practice.

Active membership of our Association, too, can help, not only because it stimulates interest in scientific matters, but because it affords opportunities for social contact between medical men. It does one good to know that we are not unique in our difficulties nor isolated in our ignorance. We shall only get out of our profession what we put into it. Real success is in the striving—the constant striving. Achievement is the empty prize. Oscar Wilde once remarked, "There are only two great tragedies in life. Not getting what you want—and getting it." Let us pray therefore, not for the achievement, but for the ability, the enthusiasm and vigour to go on and on in our pursuit for knowledge and more particularly for wisdom.

Then there are some who just find that the never-ending nature of a medical man's day is so exacting and so exhausting that they are becoming one-track minded—that they are neglecting their general education, are making little or no contributions to their homes—that their children are growing up apace without really knowing their parent. I greatly appreciate this point of view, but I feel that there is, if not an answer, at least a reply. In this connection I have merely to ask myself the question, "How much time do you waste in the course of a day?" to prove to myself that a large measure of my frustrations are self-made, and that the cure lies in my own hands.

The middle-aged doctor has a problem all his own; for often now, for the first time, he begins to feel the strain of practice, and doubts begin to crowd his mind as to whether he will be able, either physically or mentally, to stay the course. He finds that young men appear on the scene who know things and quote authors he has never heard of, and he begins to feel that perhaps he has got into the wrong job after all. This is surely the very moment when we should keep our minds open and plastic. It is then that we should consort with these young men whose inroads on our practices we begin to fear. For they have much to teach us, even as we have much that they should be willing to learn. Their enthusiasms will infuse new life into us; in return, confident youth will look to us for comfort and guidance when those same enthusiasms have carried them into trouble and despair.

Remember that our Hippocratic oath has made us the creators of our own assassins. If we are kind to them, maybe they will defer the day of our destruction. There is no other way to conserve and prolong our lives of usefulness.

False Ideals

Then there are the few for whom medicine has lost its charm because they have taken to following false gods—those who have begun to judge success by the amount of material possessions they are able to accumulate. Far be it from me to subscribe to the doctrine of the contempt of wealth fairly earned. It would be very simple for me to disdain to acquire that to which I cannot aspire. Nor would I wish to convert you to the conviction that the greatest happiness is to be obtained from the smallest purse. There is no doubt, however, that if medicine is pursued primarily for the purpose of amassing wealth, then the tenderness of spirit which should be so important a feature in the make-up of a medical man stands in danger of being replaced by an unattractive hardness, and the vocational foundations upon which medical practice is based will be sadly shaken. In any case let us not think too deeply for the morrow and its needs, for remember, that by the time financial security is obtained high noon will be well upon us—the beauties of the dawn will have passed us by and all that will remain are the mysteries of the darkening hours and the starlight; and I would remind you that worse than poverty is poorness of spirit, meanness and self-interest.

The Doctor's Status

And finally there are those who feel that they belong to a profession that is losing its status. Time was when the doctor was thought highly of in home, in the city and in the dorp. It is true that things have changed. When I was a youth the doctor was one of the citizens who had had the opportunity of High-school and University education—an advantage that made him (apart from his professional knowledge) a most useful person in the life of the small town. This position has altered, and the medical man of today must shew a definite aptitude before he is brought into the councils of the community. In other words, his status today must be earned and is not his as a right. It is probable, too, that the technical side of our education has been increased at the expense of our cultural life and made us less fitted for public positions.

Status is a queer nebulous thing that comes to those who are "worthy of respect." If we are undignified in our treatment of patients, nurses and juniors—if we fall as individuals for the lures held out by business men who wish to use our services and skill as a make-weight in their wage-scale—if by contrast we undertake to carry out a volume of work beyond our capacity to do faithfully and well—if by direct word or inference we belittle the efforts of our colleagues—then we are letting ourselves down, and we are letting the side down. Gone is our *esprit de corps* and, since our professional life is a sham, our professional status, too, is gone.

I don't suppose that I have more than touched on the fringe of the causes that produce that tragedy of disappointments—the doctor who is unhappy in the service of medicine. So great is this tragedy and so insidious in its onset that it might be well to consider for a moment or two whether it is possible to do anything to prevent such a malaise striking us down individually.

I would say to the young and care-free: Beware lest the first fine furious flood of ambition carries you into the backwaters of medicine—into a limpid unrippled pool of practice, where you are a spent force—a nonentity—a purveyor of pills, potions and penicillin. Seven years in the study of handling humanity has fitted you for something better than this; but only if you have learnt something from each new experience, from each new mistake. If the pace of your life is too speedy, take your foot off the accelerator or you will arrive at the end of your destination hot and tired, and will have seen nothing of the beauties of the road that brought you there.

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ADVICE

Develop method in your lives so that you will be able to accomplish more in a day and have time to dawdle by the wayside and enjoy the companionship of your patient and your colleagues. Develop a philosophy early on in life—decide, if you can, the standard of living to which you aspire and live well below it; in this way you will avoid temptation. Perhaps this will not be such a good thing, since we never know the strength of our integrity until we have withstood the actual attack of temptation.

Think about linking up with your colleagues and working in arrangement or in partnership. It is true that our training tends to make individualists of us, and medical men are notoriously bad at working in harness. Nevertheless, I spent some of the happiest years of my own life in partnership—with the late Dr. H. A. Moffat—and I see that many other equally happy associations are developing in the area covered by our Branch. Good luck to them! For the partners will find time for meditation, culture, exercise and hobbies. They will experience the joys of friendship within the profession; and life has no pleasure higher or nobler than friendship.

The only disease that can kill successful partnership is the malady of idleness, out of which grows doubt, suspicion and jealousy. We can only pity the sloth who is as useless to himself as he is to others. Partnerships grow and flourish with mutual understanding and magnanimity, especially in moments of stress where there are changes of fortune or conflict of opinion.

I would recommend that you read regularly of the wisdom contained in the writings of Sir William Osler. His words will be a light in the wilderness to guide your feet.

> "To those who have
> The dreary sickness of the soul
> The fear of all bright vision leaving them
> The sense of emptiness, without the sense
> Of an all-abiding purpose anywhere"
>
> *T. French*

I plead that they, too, will undertake a little self-examination. I ask them to inspect their lives, both professional and private and to ask themselves how they have failed the noble heritage which was made theirs on that great day when they received their degrees. I ask them to remember that the extent to which they have fallen from their original ideals will reveal itself *daily* in their work and in their dealings with others. It cannot be hidden; it will manifest itself to all and sundry and they will cease to be worthy to carry the torch which was entrusted to them and whose flame they have allowed to die down.

I ask them to re-dedicate themselves to their calling and, with bold heart and high endeavour, let them accept the burden which is theirs for their short life span, so that all men may say of them as doctors that they are honoured members of a noble profession.

WHO EXPERT COMMITTEE ON RABIES – SECOND REPORT

In this report, the WHO Expert Committee reviews the great advances made in rabies control in the past three years. The most interesting advance is the use of a vaccine prepared by repeated passage of Flury strain virus through chick embryos. Although the vaccine is not yet recommended for human treatment, it has proved effective in mass campaigns for immunization of dogs in Israel and Malaya. For prophylaxis in human subjects antirabies hyperimmune serum produced in horses is recommended; the best results are obtained under laboratory conditions when the serum is administered within 72 hours of exposure to infection.

Potentially rabid wounds in man are to be immediately thoroughly cleaned with soap or detergent solution, followed by the use of strong mineral acids such as nitric acid for deep wounds.

The basic principles of rabies-control programmes are listed as: (1) elimination of stray dogs; (2) vaccination of dogs; (3) control of wild animal vectors. It is noted in relation to the third point that rabies has been discovered in insectivorous bats in Florida and Pennsylvania; the significance of this finding is under investigation.—(Wld. Hlth. Org. Techn. Rep. Ser., 1954, 82.)

EXPERT OPINIONS ON POLIOMYELITIS

The first report of the WHO Expert Committee on Poliomyelitis is now available* and contains 65 pages, closely packed with information on this highly topical disease. It is impossible to condense this material, but some of the advocated methods of control of poliomyelitis should be noted. Since the disease is now considered to be essentially an alimentary infection, isolation of patients for the period during which they are excreting virus in their fæces is advisable. Arbitrarily, this period has been set at three weeks, but this may be an underestimate. Contacts should be quarantined for a similar period. In nursing cases, the same precautions as for typhoid fever should be taken, and convalescent patients should not be associated with others for six to eight weeks from the onset of the disease. In the case of small children, quarantine of contacts should include other children and staff of day nurseries or nursery schools, as well as the siblings and parents of children attending such institutions, which should be closed. It is not necessary to close schools for older children, but school contacts are to be observed for three weeks and no newcomers introduced in that time. The community is to be instructed on the spread of the disease, and advised in epidemic periods to wash hands frequently, protect food from flies (whose role, however, is still undefined), wash uncooked food, avoid intimate association with contacts of cases, avoid over-exertion, unnecessary travel and use of non-chlorinated swimming pools.

Elective tonsillectomy should not be carried out in epidemic periods. Patients suspected of having poliomyelitis must be kept in bed for a week, even if nothing further develops.

Definite advice on immunization campaigns is given. Immunization against diphtheria and whooping cough should be temporarily suspended only if the disease assumes serious epidemic proportions in the area. In minor epidemics, the use of adsorbed combined vaccine is to be discouraged. Otherwise, the campaign can go on. Special precautions are to be taken against cross-infection by injections, since the skin of patients may be contaminated with virus.

The fact that control of poliomyelitis by active immunization or vaccination is still in the experimental stage is strongly emphasized. Conditions under which the use of gamma globulin is permissible are detailed.

Many other features of the disease are discussed in this invaluable little monograph, which everyone concerned with poliomyelitis should study.

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*Wld. Hlth. Techn. Rep. Ser., 1954, 81: World Health Organization, Geneva; Ryerson Press, Toronto; Periodica, Montreal. $0.50.

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Association Notes

THE VANCOUVER MEETING, 1954

IT IS 23 YEARS since British Columbia last invited us to an annual meeting in Vancouver. In 1946 the B.C. Division was our host at Banff, and magnificently overcame the frustrations of a 400-mile gap. But in this year of grace Vancouver again was able to open its attractive and hospitable doorways. The world has changed indeed in those 23 years, but nothing has been able to weaken the hospitality so warmly and incessantly exercised at this 87th meeting of our Association.

We refer elsewhere to the retirement of Dr. Routley, and would only re-echo here the congratulations so warmly offered to Dr. Arthur Kelly as our new General Secretary. That his taking over of the helm has been so successfully carried out is a good augury for the prospects of the future work of the Association.

The meeting in general followed the long familiar pattern of other conventions. The Executive Committee spent Friday and Saturday on an agenda which was deceptively short in appearance, and Council meetings on Monday and Tuesday again proved how short two days (and one night session) are for full discussion.

A sign of the increasing interest being taken by Canada in world medical affairs was the formation of a supporting committee to the World Medical Association. This Association, representing 700,000 physicians throughout the world has an incredibly small revenue because of the poverty of many of its member associations, and it is proposed that as has long been done in the U.S., Canada help by raising funds through individual and corporate memberships to its supporting committee. It was also decided to ask the W.M.A. to hold its Assembly in Canada in 1958 or 1959.

Arrangements for the great tripartite CMA-BMA-OMA meeting in Toronto next year, at which Dr. Routley will preside, were mentioned. This meeting should bring a good team of representatives of British medicine across the Atlantic.

The Council made the final decision to consolidate all national activities of the CMA under one roof in Toronto. Steps to implement this step are being taken.

It also gave its approval to the fluoridation of public water supplies as a dental caries-limiting measure, noting, however, the need for proper controls and safeguards.

Certain modifications were made in the CMA code of Ethics after discussion almost as extensive as that which accompanied the report of the very active committee on economics.

Hospital accreditation and the approval of hospitals for intern training were debated; as regards the former there was obviously a feeling that work must continue towards the objective of a purely Canadian accreditation programme correlated at the top level with the corresponding U.S.A. programme.

Taking the meeting as a whole, 1954 might be described as the year of fuller recognition of the general practitioner. In every aspect of the programme—in Council; in the teaching programme; in the coloured television transmissions and lastly, in the activities associated with the inauguration of the College of General Practice – his needs and wishes have received the consideration they justly deserve.

One theme which has also run through the proceedings is that of rehabilitation. It is right and proper that this should have occurred, for Vancouver is perhaps the most forward-looking city in North America as regards restoration to activity of the disabled. The most prominent figure in this work is our President, Dr. G. F. Strong, under whose driving personality the Western Rehabilitation Centre has developed so impressively.

On Thursday, June 17, the College of General Practice was inaugurated at a luncheon at which Dr. Murray Stalker, of Ormstown, Que. was installed as president. A most gratifying enthusiasm for this project was shown at the first meeting of members and observers held on the previous day. The number of applications for membership so far received is encouragingly large; it is to be hoped that a large proportion of the general practitioners of Canada will realize the advantages to be derived from membership.

The annual general meeting was held on Wednesday, June 16, with the usual colour and dignity associated with the occasion. Fraternal delegates were welcomed in the persons of Dr. R. Hale-White, London, and Mr. S. A. S. Malkin, Nottingham, from the British Medical Association; and Dr. C. C. Sturgis, of Ann Arbor, Mich., from the American Medical Association. Then came the presentation of senior memberships; five of the eleven chosen for this honour were present; Drs. J. H. MacDermot and A. H. Spohn from British Columbia; Dr. J. W. Richardson from Alberta; Dr. W. A. Chestnut, from Saskatchewan; and Dr. Murdoch Mackay from Manitoba. The installation of Dr. Strong as President, with his brief inaugural comment, and the presentation of the past-president's badge to Dr. C. W. Burns, were then carried out.

The final item on the programme was the pleasant ceremony of a formal tribute and presentation to Dr. Routley on his retirement from the General Secretaryship. The presentation took the form of a handsome silver tea-set; and with this Mrs. Routley was presented with a large bouquet of roses.

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MEDICAL SOCIETIES

SASKATCHEWAN SURGICAL SOCIETY

The sixth annual meeting of the Saskatchewan Surgical Society was held in Saskatoon on May 1 and 2. A large group was in attendance and the meeting proved to be very successful. Dean Macleod placed the facilities of the Medical Building at the disposal of the group and this contributed much to its obvious success.

Dr. F. M. Woolhouse, a native Saskatonian who now resides in Montreal, was the guest speaker, his topic being "The Uses of Cancellous Bone in Reconstructive Surgery," in which he pointed out its versatility. Along with Dr. R. Dale and Dr. S. Orchard, Dr. Woolhouse also participated in a "Symposium on Burns of the Hand." Dr. C. Biro of Saskatoon reported "A Case of Carcinoma in the Gastric Stump," discussing it in all its aspects. Following his paper, an excellent symposium on "Diverticulitis of Colon" was given by Drs. D. C. MacRae of Regina, S. Young of Regina and R. W. Cram of Saskatoon. On Saturday evening those present were entertained by the Saskatoon surgeons at the Saskatoon Club. Mr. J. Wood, the librarian of the Saskatoon City Library, gave an address on "Doctors in Literature," which was much appreciated and enjoyed. On Sunday, May 2, Dr. A. C. Taylor of Regina gave a paper on "Solid Tumours of the Ovary," and Dr. R. A. Gill of Saskatoon discussed "Spinal Fractures and Paraplegia."

Considerable discussion followed the presentation of all the papers, and was an indication of their appreciation on the part of the listeners. During the sessions, in addition to the president, Dr. F. E. Wait, Dr. L. H. McConnell and Dr. A. L. Caldwell acted as chairmen.

Directors for next year were appointed as follows—Dr. C. J. Houston of Yorkton, Dr. J. H. Wilfong, Moose Jaw, Dr. B. A. Jackson, Saskatoon, Dr. A. L. Caldwell, Saskatoon, Dr. J. E. Leddy, Saskatoon, Dr. O. M. Irwin, Swift Current, Dr. J. J. Hamelin, North Battleford, Dr. D. C. MacRae, Regina, Dr. C. H. Crosby, Regina, and Dr. A. C. Taylor, Regina.

Dr. Taylor was named as president, Dr. Caldwell as vice-president, and Dr. R. C. Anderson as secretary for the following year.

THE WINNIPEG MEDICAL SOCIETY

The annual meeting of the Winnipeg Medical Society was held on May 20. Reports from various committees indicated that the Society is flourishing. There are 450 members with an average attendance at regular meetings of 111. The annual hospital meeting attracted over 200 doctors to St. Boniface Hospital. Eleven past presidents attended the annual meeting.

The election of officers resulted as follows: President—Dr. F. Hartley Smith; Vice-president—Dr. A. R. Birt; Secretary—Dr. A. W. McCulloch; Treasurer—Dr. D. L. Kippen; Trustee—Dr. Dwight Parkinson.

Honorary life membership was conferred on Drs. D. F. McIntyre, C. M. Strong, N. W. Warner and E. J. Washington.

Dr. David Swartz, the retiring president, gave the presidential address which was very well received. He dealt with doctors, especially those who had resided in Canada who were known for excellence in fields other than medicine. In the list were such well-known names as Osler, Banting, Roddick, Tait McKenzie, John McRae, "Red" Michael Clark, John Rae, John Schultz, John McLoughlin, D. A. Stewart and many others.

SPECIAL CORRESPONDENCE

The London Letter

(From our own correspondent)

CORTISONE VS. ASPIRIN

"For practical purposes, therefore, there appears to have been surprisingly little to choose between cortisone and aspirin in the management of these 61 patients in the early stages of rheumatoid arthritis" is the precise, disappointing, though scarcely unexpected, conclusion of a joint committee of the Medical Research Council and Nuffield Foundation on Clinical Trials of Cortisone, ACTH, etc., based upon a carefully controlled clinical trial of a year's duration. The patients were in the age-group, 17-59, and had rheumatoid arthritis of not less than three months', and not more than nine months', duration. By random sampling, 30 were selected for cortisone therapy and 31 for aspirin. The only two respects in which cortisone had any advantage over aspirin was in raising the hæmoglobin and lowering the blood sedimentation rate. In all other respects—joint tenderness, range of movement in the wrist, strength of grip, tests of dexterity of hand and foot, and clinical judgment of the activity of the disease, there was nothing to show between the results obtained with the two drugs at the end of three, six, nine and 12 months.

On each form of treatment, at the end of a year the disease was judged to be inactive, or practically so, in three-quarters of the patients, whilst two-fifths of them were regarded as capable of normal work and capacity. Side-effects were never serious and were equally common in the two groups—in 19 of those receiving cortisone (moon-face, depression, and euphoria) and in 21 of these receiving aspirin (tinnitus, deafness, nausea).

ROYAL COLLEGE OF SURGEONS

The 500 visiting members of the American College of Surgeons, including 50 Canadians, have had an opportunity of seeing some of the glories of the new buildings which are going up on the bomb-devastated site of the Royal College of Surgeons in Lincoln's Inn Fields. The meetings of the American College were the first to be held in the reconstructed Great Hall, which was just completed in time for the occasion. The Hall, which is 120 feet long, is panelled in chestnut, and the floor is made of gurjun, an African hardwood. The coats of arms of John Hunter and Lord Lister have a place of honour, flanking the clock, on the front of the gallery. The chairs are of oak, upholstered in blue hide. Those for the dais have been given by, or in memory of, past members of council, and the tall chair for the chairman is the gift of Dr. Frank Stansfield. More than half of the 200 chairs required for the body of the Hall have been presented by Fellows or other friends of the College, and carved with the appropriate name. The Council Room is panelled in oak obtained from a single tree planted at Lilford Park, Northampton, in the reign of Queen Elizabeth I. The chairs here are similar to those in the Great Hall. Each has been presented by a member of council who will use it during his tenure of office and then pass it on to his successor. The names and dates of all users will be carved on the chairs as one generation of councillors succeeds another.

NEGLECTED NEUROLOGISTS

The recently published interim report of the committee on neurology of the Royal College of Physicians paints a pathetic picture and suggests that neurology is the Cinderella of the specialties. At the same time there is no evidence of the neurologists being prepared to lower their self-imposed standards or to yield an inch to their colleagues in general medicine. Thus, the definition of a neurologist is "a trained physician with a higher qualification in medicine who has received the necessary special

training and experience and proposes thereafter to devote himself to that specialty." The committee definitely excludes from its fold the general physician who has gained some experience in neurology in the course of his training and practice in general medicine. The minimum training required for a neurologist extends over six years after first qualifying: the statutory year of resident hospital appointments; a year as a senior house officer in a neurological hospital or the neurological department of a general hospital; four years as a senior registrar in a neurological hospital or department. A higher qualification, "preferably" the Membership of the Royal College of Physicians of London, is advisable (in practice, essential), but no support is given to the suggestion that there might be a diploma in neurology.

Some of the statistics produced in the report certainly make depressing reading for the successors of Head, Kinnier Wilson and Gordon Holmes. There are only 50 to 60 practising neurologists in England and Wales, and only 20 of these practise outside the London area. Only three new neurological centres have been established since the advent of the National Health Service. Of the ex-service graduates training as neurologists after the 1939-45 War, only 15% have been able to find "reasonable employment." Indeed, according to the authors of this report, the outlook is "so discouraging" that newcomers "are becoming increasingly reluctant to enter a branch of medicine in which this country is pre-eminent," and many are emigrating. So perhaps Britain's loss is Canada's gain?

WILLIAM A. R. THOMSON

London, June 1954.

OBITUARIES

DR. DAVID LESTER ABRAMS died recently in Vancouver, B.C. A native of Montreal, he graduated in medicine from McGill University. Dr. Abrams worked for several years with the Department of Veterans' Affairs in Montreal and in 1949 moved to Vancouver where he practised until his death. He is survived by his widow and three sons.

DR. BALFOUR COOPER ARMSTRONG, 57, died in the Colonel Belcher Hospital, Calgary, Alta., on April 29. Born at Fordwich, Ont., he graduated in medicine from the University of Toronto. A veteran of World War I, Dr. Armstrong had practised in Medicine Hat, Alta., since 1930 and was one of the original members of the Medicine Hat clinic. He was medical officer of the South Alberta Reserve Army Regiment, city alderman from 1946 to 1950 and member of the library board from 1948 to 1953. He is survived by his widow.

DR. GAETAN BARRY, 55, died in Montreal on April 17. A graduate in medicine from the University of Montreal he took postgraduate work in cardiology in Paris from 1929 until 1933. Later he studied in Germany. On his return to Canada, Dr. Barry joined the department of cardiology at Notre Dame Hospital, Montreal, where he remained until his death. He is survived by his widow.

DR. COLIN CAMPBELL, retired eye specialist, who practised in Toronto for 45 years, died on April 23. A native of Toronto and a graduate of Trinity Medical College in 1897, he served for several years as medical officer of the *Tartar*, and later the *Empress of India*, from Canada to Japan. After three years of postgraduate work in England, Dr. Campbell became a member of the Royal College of Surgeons and of the Royal College of Physicians. He was house surgeon at the Royal Ophthalmic Hospital, Moorfields, England. On his return to Canada in 1905, he established a practice in Toronto and after World War I was associated in work for veterans. Dr. Campbell retired five years ago. He is survived by his widow, a daughter and two sons.

DR. J. HERBERT CONROY died at Edmonton, Alta., on April 18 at the age of 65. Born in Peterborough, Ont., he graduated in medicine from McGill University in 1915. He practised first at Grande Prairie, Alta., and a year later moved to Edmonton where he remained until his death. Dr. Conroy was medical superintendent in the area for the Department of Indian Affairs for more than 30 years. He made periodic calls at all Indian reservations north of Edmonton and was on call for the Department at all times. Dr. Conroy was medical examiner for Edmonton separate schools and also for the Edmonton Boxing and Wrestling Commission. He was instrumental in the building of St. Joseph's Hospital and was appointed its first medical superintendent in 1931. During World War II he was a captain in the reserve army. Dr. Conroy is survived by his widow, two daughters and one son.

DR. ADRIEN GAGNE died at St. Joseph Hospital at Rimouski, Que., on April 21. Born at Rimouski in 1907, he graduated in medicine from Laval University in 1934. Immediately upon graduation he established his practice in Rimouski where he remained until his death. From 1936 until 1940 Dr. Gagné served as coroner of the district. A captain in the reserve army, he served in World War II from 1940 until 1943 as administration officer, with the rank of major, of the 2nd Battalion of the Fusiliers du St. Laurent. In 1938 Dr. Gagné had made a special study of tuberculosis and since that time was in charge of the anti-tuberculosis clinic at Rimouski. Dr. Gagné is survived by his widow, two daughters and a son.

DR. HARRY GOUDGE GRANT, Dean of Medicine, Dalhousie University, died suddenly Saturday, May 8 at the Victoria General Hospital from a heart attack. His first warning had come only the day before and his stay in hospital was considered to be a period of rest before going on retirement leave June 1.

Dr. Grant was born in Halifax in 1889, and graduated in medicine from Dalhousie University in 1912. From there he proceeded to London where he earned the degrees of Master of the Royal College of Surgeons and Licentiate of the Royal College of Physicians. After three years of practice in Halifax he went into the public health field and became assistant to the commissioner of health of the State of Virginia. In 1932 he joined the faculty of the Dalhousie Medical School and, on the death of Dean W. H. Hattie the following year, assumed the deanship. He also held the secretaryship of the Nova Scotia branch of the Canadian Medical Association for 20 years.

Dr. Grant is survived by his widow and three sons, Arthur St. C., Harry J. A. and Dr. Robt. S. Grant.

AN APPRECIATION OF "PAT"

In three years it would have been fifty since we gathered as freshmen in the old building at the northeast corner of Carleton and College that then represented the medical school. From the beginning we were friends. He taught me—although I proved a poor pupil—how to play poker. Later, it was at his urging that I joined him at 3 Upper Bedford Place, London, in postgraduate study, where he ciceroned me around the hospitals.

In his company I first saw from the top of the dome of St. Paul's the smoke of London's million chimneys flying before the west wind. In his company I first stood in the Poet's Corner in Westminster Abbey, saw for the first time at the National Gallery the glories of Rembrandt and Michelangelo, heard for the first time at

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Covent Garden the unforgettable trio of Destinn, Scotti and Caruso, lost at the Derby Day races at Epsom my first pound.

Later still, it was at his urging that I came back to Halifax and with him and Joker Lyons started a somewhat ill-starred clinic on Gottingen Street. At that time Gottingen Street was more or less the centre of the shipyards' employees, a fair number of whom became our patients. The three of us went up to see the launching of the last ship built there and as she slid into the harbour, Joker turned to us and said: "There goes our practice." And so it proved.

Pat left Halifax and, for a few years, our ways parted, while he became an expert in public health in the American south, in preparation for the call that eventually brought him back to Dalhousie as Dean. Few Deans can have had a better preparation. He had spent some years in country practice at Rose Bay, after three years studying internal medicine in London. Then followed the years in preventive medicine. This apprenticeship in the three major fields gave him a splendid background as an educator, and an abiding sympathy for the men working in those areas of medical endeavour.

To me the outstanding quality he showed as Dean was his quick and visionary imagination. In the presence of a new idea his mind readily caught fire, and he was amazingly sympathetic to a new idea. You had only to go to him with a thought, a plan, an experiment, and he leapt at it. As this quality was combined with an invincible optimism, he often promised more than he was able to deliver—but he tried. And if many of the plans and experiments and ideas he backed so enthusiastically came to naught, it was usually because somewhere higher in the hierarchy he ran into an ardour less sanguine than his own.

If sometimes he forgot, and affairs languished, perhaps we also sometimes forgot—forgot the things he did in the last 20 years to build up the medical school. Only one or two of us know how much the new library owed to his endeavours; indeed, I am firmly convinced that but for him we would not have it yet. He persuaded us—rather against our will—to adopt the clinical fourth year that has proved such a boon to the medical student. When he became Dean, the annual budget of the school was under a hundred thousand dollars: it is now several hundred thousand. How was this increase achieved? Mainly as a result of his efforts. He laid the many trains, did the quiet dogwork, conducted the preliminary *pourparlers*, even though others stepped in at the end to put the final comehither on it. Nor did it seem to bother him who got the credit, so long as the medical school got the money.

While he would carry the torch for any and all of us, he was particularly concerned with the full time men. These, being on salary, and low salary at that, he felt to be vulnerable in a way that we others were not. He did what he could not only to secure their tenure but to increase their pay and make available the lifeblood for their researches. The fact that he failed sometimes also bothered him greatly.

I can never recall his doing a mean or underhanded thing. He had to do many things that were difficult and unpopular; he had to hurt sometimes, but he was never shabby in such dealings. Perhaps this was the result of his generosity, of his modesty, and of those other qualities that made him a gentleman in the genuine meaning of the word.

Sometimes we were impatient with him. Often, he seemed to move more slowly than we thought he should. Perhaps in so thinking, we failed to realize how desperately sometimes he was caught between the upper millstone of our needs and the nether millstone of authority. His could not always have been an enviable position under circumstances where he had to—and did—preserve a loyalty to both sides. But the thing we could always be sure of was that he was an indomitable enthusiast for anything that would better the medical school.

When you have gone to college with such a man, when you have seen Europe with him in the springtime of your life, when you have been his partner, when you have had him for a leader in your profession, when you have sat innumerable nights by his or your fireside talking of this and that (but mostly the Dalhousie Medical School), what happened the other day is a terrible wrench. Something has gone that can never be recaptured—something that is tied up with youth and the high tide of manhood—both of which could somehow be renewed in those fireside conversations, but can now no longer be renewed.

Vale, Pat.

H. B. ATLEE

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DR. C. DENTON HOLMES died at Victoria, B.C., on March 16 at the age of 86. Starting his practice in Victoria in 1914, he was appointed medical superintendent of Soldier's Re-establishment for Vancouver Island the following year. In that capacity he was sent to England to study what hospitals there were doing for veterans. Dr. Holmes retired from private practice four years ago. He is survived by his wife and four children.

DR. ALLAN H. N. KENNEDY, 65, died at Winnipeg, Man., on April 11. Born at Fort Macleod, Alta., the son of the surgeon with the North West Mounted Police in the 1880's, he was a graduate in medicine of McGill University. Immediately upon graduation he returned to his native city where he practised until his recent retirement. Dr. Kennedy is survived by his widow and daughter.

DR. ROBERT HORACE KINSMAN, 56, died at the Toronto General Hospital on April 26. Born at Hamilton, Ont., he graduated in medicine from the University of Toronto in 1928. For the past 26 years Dr. Kinsman had been medical doctor on the staff of the Canadian National Railways. He is survived by his widow.

DR. JAMES GARFIELD MUNROE, 71, died at Montreal on April 27 after a long illness. Born in Embro, Ont., he received his medical degree from McGill University in 1913. Following his internship at the Royal Victoria Hospital, Montreal, he enlisted in the Royal Canadian Army Medical Corps and served overseas until the end of World War I. On his return to Canada, Dr. Munroe established his practice in the Maisonneuve district of Montreal and was for 20 years chief consultant of the Maisonneuve Baby Clinic. He was also on the honorary consulting staff of the Royal Victoria Hospital. He is survived by his widow and three sons.

DR. FREDERICK PILCHER died at his home in Calgary, Alta., on May 5. Born in Peterburg, Virginia, in 1906, he received his medical degree from the University of Virginia in 1929. After his internship he took a postgraduate course in pathology in Vienna in 1932. The following year Dr. Pilcher was granted a fellowship in urology at the Mayo Clinic in Rochester and remained there until 1937 when he became genitourinary surgeon with the Calgary Associate Clinic at Calgary, Alta. He was on the civilian committee instrumental in the organization of No. 52 Squadron of the Air Cadets in Calgary and in 1943 he joined the Canadian Army Medical Corps in which he served until the end of World War II. Besides being a member of the Calgary Associate Clinic, Dr. Pilcher was also senior consultant in urology at the Holy Cross and Colonel Belcher Hospitals. He was also on the medical staff of the General Hospital. He was an interested member of local, provincial and national medical societies. On many occasions he gave papers at national conventions and wrote many articles for medical journals. He is survived by his widow and one son.

DR. ALEXANDER DUFFERIN STEWART died at Fort William, Ont., on April 18 at the age of 77. Born near London, Ont., he studied medicine at the University of Toronto. In his final year he won the George Brown scholarship in pathology. After graduation in 1898, Dr. Stewart remained at the University of Toronto for post-graduate study. For a year and a half he served as ship's doctor on the *Empress of Japan* on the Vancouver to Hong Kong run. In 1903 Dr. Stewart established his practice in Fort William and became the official C.P.R. doctor for the district. During World War I he was official doctor for Canadian Car and Foundry Co. Ltd., and also served as quartermaster for the 96th Regiment. For many years Dr. Stewart served as medical officer of health for the township of Paipoonge and was local representative for the national medical council. He took an active part in civic affairs and served for two years as an alderman. Always interested in sports, he was the medical officer for the *Daily Times Journal* annual road race for many years. Dr. Stewart is survived by his widow, a daughter and two sons.

DR. ERIC McLEOD SUTHERLAND, 77, died at his home in Freelton, Ont., on April 25. A native of Belleville, Ont., he graduated from Queen's University Medical School in 1906. After graduation, Dr. Sutherland became a staff member of the Ontario Hospital in Brockville. He later established his private practice at Freelton and served the district for more than 30 years. He is survived by his widow, a daughter and two sons.

ABSTRACTS *from current literature*

MEDICINE

The Clinical Value of Gastrointestinal Cytological Diagnosis.

RUBIN, C. E., MASSEY, B. W., KIRSNER, J. B., PALMER, W. L. AND STONECYPHER, D. D.: GASTROENTEROLOGY, 25: 119, 1953.

Approximately 300 patients were examined by various cytological techniques during a two-year period. The presence of benign or malignant disease was established by pathologic examination or by clinical observation in 216 patients. Cytology constituted an integral part of diagnostic workup mainly in those patients suspected of gastrointestinal malignancy by radiologic, endoscopic or clinical examination. Malignant disease was found in 44% of this highly selected series. The technical requirements for successful cytodiagnosis of the gastrointestinal tract are described and new methods are presented, including the antral abrasive balloon, chymotrypsin lavage, and the magnetic positioned enema.

Cytology was most useful for its accuracy in differentiating benign from malignant lesions. The overall accuracy was 91% (81% in malignant cases and 98% in benign cases) in the 216 proved lesions of the œsophagus, stomach, pancreas and colon. B. L. FRANK

Simplified Method for the L.E. Cell Test.

DUBOIS, E. L.: ARCH. INT. MED., 92: 168, 1953.

The L.E. test used to verify the diagnosis of lupus erythematosus is in the opinion of the author pathognomonic if positive. Negative preparations occur in 30% of typical cases of systemic lupus erythematosus. In the L.E. test four changes are looked for in the preparation, namely, increased rouleaux formation, "hematoxylin bodies", rosettes, and L.E. cells. The first is nonspecific. The finding of the second is suggestive. The third is highly suggestive, and the change that must be found in order to call a preparation positive is the typical L.E. cell. The procedure presented can be readily adapted to routine use in office or hospital as a screening method. In screening patients in whom lupus is strongly suspected, bone marrow and peripheral blood L.E. tests must be performed.

With vigorous ACTH and cortisone therapy, L.E. cells invariably disappear within four to six weeks. While the maintenance dose is being adjusted or in difficult or relapsing cases, the test may revert temporarily to positive. B. L. FRANK

Tuberculosis Today and Tomorrow.

SMITH, D. T.: AM. REV. TUBERC., 67: 707, 1953.

In this paper the author cites statistics which indicate that the rapid decrease in the death rate from tuberculosis since 1947 is attributable primarily to improved medical and surgical treatment. This is so much the case that the tuberculosis death rate can no longer be used as even a rough index of the frequency and importance of this disease. He establishes the fact that this decrease in the death rate has not been accompanied by a corresponding decrease in tuberculosis morbidity and case-finding. He believes that, even yet, many active cases remain undetected in the population, constituting a source of new infections.

Smith's statements are specifically based on the state of affairs in Minnesota, but it appears that they can be safely applied to the situation in Canada and the United States, generally. He considers that the remarkable progress in the control of tuberculosis in Minnesota is the direct result of an active control programme and not the spontaneous effect of a rising standard of living or other non-specific factors.

He advises that the control programme for the future should be expanded to include a tuberculin test for every person in the state, with an annual chest film for every positive reactor and an annual tuberculin test for every negative reactor. It is believed that the money saved in treatment-costs, by detecting new cases in the incipient rather than in the moderately advanced stage of the disease, should be more than sufficient to pay for the increased cost of the expanded case-finding programme. S. J. SHANE

Serum Diphenylamine Reaction in Rheumatic Fever.

COBURN, A. F., MOORE, L. V. AND HANINGER, J.: ARCH. INT. MED., 92: 185, 1953.

Diphenylamine values were studied in three groups of children suffering from rheumatic fever: one group was treated in a uniform manner during the acute illness; a second group received several types of therapy following admission to the hospital; the third group were children with quiescent rheumatic fever, who were attending school and were receiving no treatment. A substance in the serum was found which reacts with diphenylamine to give a purple colour. The nature of this substance is unknown. Its concentration increases in the blood stream in rheumatic fever in proportion to the intensity of the inflammatory process. Connective tissue is a rich source of the diphenylamine-reactive substance. The diphenylamine reaction parallels the erythrocyte sedimentation rate in rheumatic fever.

It was concluded from this study that serial diphenylamine determinations provide information helpful in estimating the degree of rheumatic activity and in evaluating the effectiveness of therapeutic agents.

B. L. FRANK

Canad. M. A. J.
July 1954, vol. 71

Indications for Surgery of the Upper Gastrointestinal Tract.

INGELFINGER, F. J. AND SANCHEZ, G.: NEW ENGLAND J. MED., 250: 445, 1954.

This is an excellent discussion of a subject of great importance to all physicians and careful perusal in its entirety is recommended since space does not allow an adequate summary. The authors stress that a frequent error in the treatment of peptic ulcer is "stubborn" medical management in the face of partial obstruction, which is manifested by the following diagnostic points, any two or more of which call for surgical intervention; annually recurring symptoms for five or more years; failure of a medical regimen which was formerly effective; vomiting, or anorexia with epigastric fullness increasing during the day; a gastric succussion splash three hours after eating; gastric retention greater than 300 c.c. on two or more occasions three hours after meals; radiological findings of a five-hour residue on two or more occasions; a severely deformed and narrowed pyloroduodenal segment.

Hæmorrhage calls for surgery if it is massive, persistent or recurrent and the age of the patient does not affect the decision. Surgery is better avoided if the exact site of bleeding is not known and routine investigation, such as x-ray and gastroscopy, is indicated in these cases. Acute perforation of peptic ulcer is a surgical emergency if first seen within 24 hours of the catastrophe, after 48 hours conservative therapy is generally indicated, perforation first recognized between 24 and 48 hours after its onset must be individualized in its management. Gastric ulcer can be treated conservatively provided it shows progressive and complete healing under very careful observation with frequent radiological examinations. Persistence, or recurrence, is a strong surgical indication, especially in the male.

Other indications for surgery in the upper gastrointestinal tract are polyps, cardiospasm which does not respond to repeated dilatations, diaphragmatic hernia if associated with oesophagitis or with some other undoubted severe complication. Diverticula in the upper gastrointestinal tract are practically always asymptomatic and are most exceptional reasons for surgical intervention.

NORMAN S. SKINNER

Choledochoenterostomy in Chronic Relapsing Pancreatitis.

ROUSSELOT, L. M., SANCHEZ-UBEDA, R. AND GIANELLI, S.: NEW ENGLAND J. MED., 250: 267, 1954.

The authors discuss the problem of management of chronic pancreatitis and review the literature. They point out the necessity of definite diagnostic criteria for the disease and express criticism of reports of good results of groups of cases followed for inadequate periods following surgery.

The following criteria are recommended for the diagnosis of chronic pancreatitis; repeated bouts of abdominal pain accompanied by significant elevation of amylase and lipase content of serum or urine; demonstration of pancreatitis at operation by fat necrosis, pancreatic œdema, cyst formation and biopsy evidence of inflammation, or, symptoms pointing to chronic atrophic pancreatitis even in the absence of elevated serum enzymes (abdominal symptoms associated with alteration in carbohydrate metabolism or fat digestion; demonstration of pancreatic calcification on x-ray study; and duodenal drainage study showing repeatedly a significant lowering of amount of pancreatic secretion).

Five cases of chronic relapsing pancreatitis treated by choledochojejunostomy were carefully followed for a minimal period of two years. Good results were secured in only one case (in which the removed gall-bladder was the site of an unexpected cholesterolosis). In their opinion the fact that division of biliary and pancreatic flow fails to relieve the symptoms of chronic pancreatitis indicates that reflux of bile into the pancreatic duct is not the cause of the pancreatic disease in many cases.

NORMAN S. SKINNER

Gastroscopy.

DEUTSCH, E.: NEW ENGLAND J. MED., 250: 468, 1954.

Gastroscopy is a valuable adjunct to the routine investigation of patients with gastric complaints when any doubt remains following the taking of a careful history and after careful physical examination and laboratory and x-ray studies have been done. It is of particular value in the gastritides and also is of great aid in the differentiation of benign from malignant lesions since biopsy can be easily and safely carried out, but a negative biopsy, or one indicating gastritis does not rule out carcinoma. Gastroscopic observation provides a more reliable method of ascertaining cure in gastric lesions than does radiological examination.

In the hands of the well-trained individual gastroscopy is not a serious ordeal. The procedure should be limited to approximately ten minutes and hence requires accurate observation controlled by wide experience. Mucosal biopsy is free of risk of hæmorrhage or perforation. The author discusses various gastric lesions and their gastroscopic appearances.

NORMAN S. SKINNER

Review and Evaluation of Quinidine Therapy for Auricular Fibrillation.

WEISMAN, S. A.: J. A. M. A., 152: 496, 1953.

The early history of quinidine therapy in cardiac arrhythmias is reviewed, and the more recent literature is briefly summarized. It is stressed that the oral route of administration is almost always preferable, and that the intravenous route is dangerous and should be used only when death appears to be imminent unless emergency measures are adopted. The intramuscular route should be reserved for cases in which oral use results in gastrointestinal symptoms, for patients in coma, and during surgery and anæsthesia. In contrast to previous teaching, it is recommended that digitalization should be carried out prior to treatment with quinidine sulphate and that maintenance digitalis therapy thereafter is essential. The initial use of small doses at frequent intervals is recommended, with gradual increase in size and number of doses. No more than 30 gr. (1.94 gm.) of quinidine should be given in a single day to any patient. When larger doses than this are required for abolition of any arrhythmia, reversion usually occurs. The estimation of blood levels of quinidine as a guide to dosage should be avoided, because blood concentration of quinidine does not necessarily parallel the intensity of cardiac effect.

S. J. SHANE

Role of the Physician in the Prevention of Musculoskeletal Deformity after Poliomyelitis.

BENNETT, R. L.: J. A. M. A., 153: 79, 1953.

The author aptly points out that even though the prevention of polio by immunization is on the horizon it is still not a reality and the disease will continue to be the concern of the profession for several more years.

Many physicians who do accept the care of the polio patient are lacking in knowledge of after care, with the result that preventable deformities occur too often. Recognition of the following facts will be of assistance: (1) the causes of deformities can be determined before they occur, and can be controlled if discovered and treated early. (2) Even mild deformities can severely limit the maximum benefit which should be gained by muscle re-education and functional training. (3) One

deformity rarely exists alone and will start a chain of disabilities. (4) Deformities are best prevented—they rarely can be corrected after they are definitely established. These facts plus the realization that musculoskeletal deformity must be anticipated because its development may be slow and insidious will cause the doctor to extend his knowledge of kinesiology so that he will be better able to recognize normal and abnormal static positions and movement patterns.

Next to atrophy, the leading cause of deformity is persistent faulty position. The reasons for assuming faulty positions are: (1) muscle strength imbalance, (2) pain and spasm. These factors are aggravated by poor nursing techniques, inadequate splints and braces, haphazard movements, obesity, irresponsible weight-bearing, and overactivity. While pillows, sandbags and plaster shells are important during the acute illness, they must be discarded as the patient becomes active again. Then the braces and splints must be applied intelligently. No brace maker should be expected to make any appliance other than ordered by the physician, and he should not be blamed for the physician's error in prescription. Too much emphasis has been placed on the use of apparatus alone. Actually, recovery and the resumption of activity go hand in hand.

ISABEL M. LAUDER

The Diagnosis of Acute Poliomyelitis.

GRULEE, C. G. JR.: P. G. MED., 14: 47, 1953.

The general practitioner must suspect any ill-defined febrile illness during the polio season. Since laboratory methods of diagnosis are not quick nor as definite as for other diseases, he must depend constantly on his clinical judgment, and he will find himself constantly appraising numerous minor illnesses. Early diagnosis, of course, will do much toward the prevention of the development of serious involvements in paralytic cases.

During the summer months, especially if there is polio in the community, the appearance of any "flu-like" symptoms, as sore throat, headache, malaise, loss of appetite, and perhaps some nausea or vomiting, accompanied by temperature elevation (101-102°) are definitely suspicious. Abdominal pain of the general type (not suggestive of appendicitis) and constipation are frequently present. Symptoms of the common cold and diarrhœa are conspicuous by their absence. If stiffness of the neck and back are present and muscle pain is found, the diagnosis of non-paralytic polio is applicable. A lumbar puncture is not necessary as a routine procedure unless some real doubts exist.

A biphasic course can be recognized in more than 50% of cases. First, the vague, 'flu-like illness, with some or all of the symptoms described above, lasting two or three days. Then apparent recovery. After a latent period lasting several hours to five days, similar symptoms recur, and the second phase, or "major" illness begins. Headache, now a major symptom, and nuchal rigidity appear with the fever. Resistance to straight leg raising, and head drop when shoulders are raised from the bed are observed. Because of back stiffness, as well as neck stiffness, the patient, in attempting to sit erect, will extend his arms behind him, resulting in a characteristic propped position known as "the tripod sign". Paralysis is more apt to occur during the course of the fever, rarely appearing afterwards.

Minimal findings such as a nasal twang to the voice and difficulty in swallowing a small piece of toast, should be enough to alert the attendants to the possibility of respiratory paralysis. Of immediate importance is clearance of the airway and maintenance of its patency before and during artificial respiration. Other warning signs of possible respiratory embarrassment will be involvement of the 9th and 10th cranial nerves and paralysis of abdominal muscles. Good respiratory excursions are important not only for oxygenation but also to insure removal of carbon dioxide from the blood stream.

ISABEL M. LAUDER

SURGERY

Carcinoma of the Floor of the Mouth.

WINDEYER, B. W.: BRIT. J. SURG., 41: 231, 1953.

Professor Windeyer describes an experience with 131 patients at Middlesex Hospital. All were squamous-cell carcinomas, but 3 did not show keratinization and 3 had indifferentiated carcinoma. In 60% there were glandular metastases. Early biopsy is of the greatest importance in ulcers or tumours of the floor of the mouth. Radiotherapy was used in the form of intrabuccal radium, teleradium and radium implant. All patients were hospitalized during treatment. The rate of 5-year recurrence-free cases, including the untreated ones, was 27%.

Complications of treatment were hæmorrhage in soft tissue, necrosis and infection, and necrosis of bone with prolonged pain. Recently there is a tendency to submit a higher proportion of cases to surgical treatment, especially when bone is involved.

BURNS PLEWES

Carcinoma of the Floor of the Mouth.

CADE, SIR STANFORD: BRIT. J. SURG., 41: 225, 1953.

Carcinoma beneath the tongue occurs most frequently in men. It spreads to the tongue muscles, to the gum and perhaps the mandible and to the cervical lymph glands, and may be in the form of an exuberant growth or an indurated ulcer. Frequently there is dental sepsis and leucoplakia. It is to be differentiated from inflammation, salivary calculi, benign mucous-and-salivary gland tumours, acute monocytic leukæmia, metastases from a primary in the tongue and rhabdomyosarcoma.

No single method of control is best: half-hearted attempts by any method are doomed to fail. Radium and surgery have given the best results. Early and small localized lesions are best treated by radiation. Diathermy should be added when the tongue and gum are involved. Surgical excision is used for bone or widespread disease in the mouth and must be wide. Tube-pedicle repair of the defects are badly tolerated and rotation or sliding flaps are better.

Of 118 patients with carcinoma of the floor of the mouth, 27% survived 5 years, ranging from 45% for localized lesions to 15% when there were secondaries in the neck.

BURNS PLEWES

Œsophagoaortal Hiatus Hernia.

ADAMS, H. D. AND LOBB, A. W.: NEW ENGLAND J. MED., 250: 143, 1954.

Many cases of hiatus hernia are asymptomatic and are found incidentally during roentgen examination of the upper gastro-intestinal tract. Medical treatment, consisting of weight reduction, diet and medication, will satisfactorily control symptoms when these do occur and surgery is only required where symptoms are sufficiently persistent and troublesome or in the event of complications, such as hæmorrhage.

The authors have operated upon 140 cases of hiatus hernia over the past ten years. The follow-up results are in general excellent. The present paper is mainly concerned with an interesting subtype of hiatus hernia where the diaphragmatic defect is primarily of œsophageal hiatus origin, but with progression in size of the hernia the right and left crura are separated anteroposterior to the aortal hiatus. As a result, a sliding hernia develops into the mediastinum behind the heart with a high incidence of cardiorespiratory symptoms (especially typical angina pain and almost classic asthmatic attacks). Eight such cases are reported in detail with uniformly excellent relief of symptoms following surgical repair, the technique of which is described.

NORMAN S. SKINNER

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Trends in Orthopædic Surgery.

LIPSCOMB, P. R.: ARCH. SURG., 67: 924, 1953.

Reports to the American Academy of Orthopaedic Surgeons on several new forms of treatment showed recent trends in their use. Femoral head prosthesis seemed to be in too frequent use. The acrylic Judet prosthesis is apparently being abandoned in favour of an intramedullary type. The Gibson approach is most common. Complications are great.

Bone from the bone bank is not as good as autogenous grafts, but it has its place: to supplement autogenous grafts in extensive fusions and obliteration of cavities and as bone plates. Freeze-dried bone stored at room temperature in vacuum containers is being used successfully. Hydrocortisone acetate (compound F acetate) exerts its maximal effect when injected locally and each injection lasts 5 to 12 days. It may be useful in allaying pain and restoring motion in traumatized joints, bursitis and rheumatoid arthritis. Intramedullary fixation is not a panacea for fractures but is useful in many fractures of the femur in adults. Forearm fractures and epiphyseal displacements in children need not be perfectly corrected. Some deformity, which will be corrected by growth, is better than open reduction or repeated manipulations.

Most ununited fractures used to be the result of inadequate immobilization, but too short plasters are now rare. Now non-unions are more often the result of distraction, or severe compound fractures. Many surgeons have abandoned metal plates and screws, or use slotted types, for this reason. Primary bone-grafting for fractured tibia is increasingly used, for it may save months or years of disability.

The importance of active exercise of every joint that does not need immobilization is a lesson that has been learned by practically everyone who treats fractures.

BURNS PLEWES

Exfoliative Cytology as a Screen Test for Urinary Tract Malignancy.

SILBERBLATT, J. M.: BULL. NEW YORK ACAD. MED., 29: 889, 1953.

A total of 596 slides from 500 different patients were examined; among these 500 patients were six cases of carcinoma of the prostate. Of the remaining 494 patients suffering from various types of urologic disease, 462 had no known cancer. Of these, 98% were correctly diagnosed as negative and 2% were incorrectly diagnosed as positive. Thirty-two patients had malignant disease of the urinary tract and of these, 81% were correctly diagnosed and 19% were incorrectly diagnosed as negative. Patients, from whom samples were taken, were unknown to the investigator as to symptomatology, reasons for seeking medical advice, or previous diagnosis. The only information sent with the specimen was the name and age of the patient.

It is concluded from this study, that exfoliative cytology of the urine is valuable as a screening test for malignancy of the urinary tract, but it is not intended to replace the usual urologic procedures. The author feels that the false negative diagnoses are not too significant, for the symptomatology plus the diagnostic facilities of the urologist almost invariably lead to the correct diagnosis.

B. L. FRANK

OBSTETRICS AND GYNÆCOLOGY

Cervical Incisions in Obstetrics.

EVANS, T. N. AND STANDER, R. W.: AM. J. OBST. AND GYNEC., 67: 322, 1954.

A series of 84 patients is reviewed in whom cervical incisions were done because major maternal and/or fetal complications demanded termination of labour. Incisions of the cervix should play a definite but limited role in the practice of obstetrics. The incidence in this series was 0.66% of the total deliveries during a seventeen-year period. If not technically so, cervical incisions to facilitate delivery must be considered a major operation. Prolonged labour and occipitoposterior positions contributed to the majority of complications indicating cervical incisions. Severe cephalopelvic disproportion should serve as a contraindication to this procedure.

Optimum conditions that should prevail before cervical incisions are done and the techniques used are described. Maternal mortality occurred in 20.2% and post partum hæmorrhage in 17.9%. There were no maternal deaths.

Careful selection of cases should yield a high fetal salvage (95.35% in this series). It is believed that in this series many infants were saved and that the fatal benefits outweighed the hazards attendant to incising the cervix and operative delivery from below.

ROSS MITCHELL

Face Presentation.

REINKE, T.: AM. J. OBT. AND GYNEC., 66: 1185, 1953.

The incidence of face presentation in this series was 0.160%. Face presentation occurred twice as often in multiparas as in primiparas. The mentoanterior position was approximately three times as frequent as the mentoposterior. There was a 13% incidence of fetal anomalies in this series.

Multiparity, polyhydraminos, monsters, face presentation secondary to brow presentation, extremely large babies, pelvic architecture and possibly premature rupture of the membranes played a part in etiology of this presentation. In 70% of these cases, vaginal delivery occurred without difficulty. Version and extraction do not seem indicated as a means of delivery because of the associated high fetal mortality and maternal morbidity. Cæsarean section should be considered as a method of choice in face presentation where satisfactory progress does not occur.

ROSS MITCHELL

PÆDIATRICS

Blood Dyscrasias Associated with Chloramphenicol.

HODGKINSON, R.: LANCET, 1: 285, 1954.

Cautious use of the antibiotic, chloramphenicol, was advised after cases of blood dyscrasias were associated with its administration. The results of this survey, undertaken in the British Isles by a Committee of the Medical Research Council, sheds some light on the subject. Twenty centres, including most of the teaching centres, in reply to a questionnaire brought to light 31 cases. In this group 28 had developed an aplastic anæmia, and three were diagnosed as granulocytopenia. One-third of the cases were children under 10, and 24 of the cases died. Administration of too high a dosage of the agent and/or over too long a period of time was noted in 24 of the cases. The average dose was over double that needed to give the maximum benefit in most infections, and four times the dose commonly used.

More than half the cases were treated for chronic diseases which, in the author's opinion, were quite unsuitable for antibiotic therapy, except perhaps during an acute exacerbation of the infection. Results here recalled to his mind similar problems of overdosage during the early days of sulfonamide therapy.

The author recommends that in children the total dose over a period of seven days should not exceed 100 mgm. per kg. of body weight. Treatment should not extend beyond the period of one week. Total adult dosage should not exceed 26 gm. and should not extend beyond a ten day period without careful consideration of the risks involved.

ISABEL M. LAUDER

The Recognition of Whooping-cough.

COURT, D. *et al.*: LANCET, 2: 1057, 1953.

After studying infective respiratory disease in young children, for five years in Newcastle upon Tyneside, the authors are certain there is justification for a fresh description and evaluation of this ancient childhood disease. Children in a thousand socially representative families were studied.

The authors point out that the early diagnosis is too often missed since the first symptoms may have the appearance of the common cold. However, there are some very elemental and major differences between the pertussis symptoms and those of the cold. For instance, although a runny nose is found in only 49% of the cases, the secretion is watery or mucoid in character, not the ropey, purulent secretion of the cold. As the child enters the second week, the discharge disappears, and the cough (which takes the child by surprise) becomes paroxysmal, increases in speed and rises in pitch, finally becoming quite staccato in effect and ending with a whoop. The cough of bronchitis is different—the child feels the need to cough and takes a sharp breath in anticipation. In acute bronchitis the child is acutely ill and the "wheezy" or "noisy" chest is in complete contrast to the "silent" chest of the child with the whooping-cough. The acute constitutional upset is also absent in pertussis. The child with bronchitis will be well within two or three weeks, while the one with pertussis has a bout of four to six weeks ahead of him.

The attending physician loses another chance at early diagnosis when he fails to take into account the fact that family infectivity is high, 8 out of 10 report familial contact. Isolation from siblings and playmates should be immediate once suspicion is aroused.

In this specific study, 906 children were followed for their first five years and it was noted that 43% developed whooping-cough (11% before one year). It was found that symptoms included; cough, 100%; vomiting, 74%; whooping and choking, 93%; nasal discharge, 49%; anorexia, 48%. The authors found that in comparing the study group with the total child population of 1947-1951, only 15% of the total group had been reported. Failure of the physician to diagnose the case properly and to report to officials accounted for the greater part of this discrepancy.

ISABEL M. LAUDER

THERAPEUTICS

The Effect of Marfanil on the Intestinal Flora in Cases of Colitis.

GOHAR, M. A., EL-SHEIKH, A. AND BASHATLY, A.: J. ROY. EGYPTIAN, M. A., 36: 321, 1953.

Man and various animal species depend on the activity of certain intestinal organisms for part of their vitamin B supply. Alterations in the fæcal flora may be associated with an appreciable reduction in the nicotinic acid level of the blood in patients suffering from colitis. The extensive use of chemotherapeutic agents today leads not infrequently to the destruction of intestinal organisms which synthesize components of the vitamin B group. The discovery of drugs which destroy pathogens without affecting the vitamin B producers is therefore an important advance.

Marfanil (Ambamide) was administered to twelve patients suffering from colitis and their stools were examined before treatment and at the end of a course of treatment consisting of six gm. of Marfanil, administered daily in divided doses for a period of five days. It was found that the drug did not suppress the action of *B. coli*, which are thought to synthesize nicotinic acid, while suppressing *Clostridium welchii*, which do not produce vitamin B factors. In fact, it appeared that there was an appreciable increase in the number of nicotinic-acid producing *B. coli*, which may have been partly due to suppression of *C. welchii*.

Most of the cases treated had been sick for more than two years. The diagnosis was based on clinical evidence and sigmoidoscopy, as well as bacteriological examination of the fæces. Following treatment, there was appreciable improvement in the general condition of the patients which was thought to be due either to the action of the drug on pathogens or the increase in vitamin B. One of the authors had observed a favourable response in his cases treated along the usual lines when large doses of B vitamins were administered.

B. L. FRANK

Propylthiouracil: 4-6 Year Follow-Up of Selected Patients with Graves' Disease.

MCCULLAGH, E. P. AND CASSIDY, C. E.: J. CLIN. ENDOCRINOL. METABOLISM, 13: 12, 1953.

In 40 of 60 patients suffering from Graves' disease who had been treated with prophylthiouracil, the disease remained in remission for four or more years after having discontinued the drug. Remission was taken to be the complete freedom from symptoms and signs of hyperthyroidism and a basal metabolic rate lower than +10%.

It has been the impression of the authors that the longer treatment with propylthiouracil was continued, the more likely the chance of lasting freedom from the disease.

B. L. FRANK

Histologic Lesions in the Thyroid Glands of Patients Receiving Radioiodine for Hyperthyroidism.

DAILEY, M. E., LINDSAY, S. AND MILLER, E. R.: J. CLIN. ENDOCRINOL. METABOLISM, 13: 12, 1953.

Histological examination was made of the glands of 23 patients with hyperthyroidism who had hyperplastic or nodular thyroid glands irradiated with I^{131}. Lesions resulting from radiation depend upon the cellular structure of the tissue radiated, the amount of radiation and the duration of the reaction to injury by radiation. Lesions include cellular necrosis, degeneration of intercellular substances and vascular diseases. In this series, the thyroid glands of seven patients were predominantly hyperplastic and no definite radiation effects were seen. The glands of nine patients showed lesions identical with those of Hashimoto thyroiditis. Four glands contained multiple nodules and showed moderate follicular atrophy of the residual glandular tissue. In three glands diffuse follicular atrophy and fibrosis was observed. Vascular changes in the glands were minimal.

Amelioration of hyperthyroidism may occur following irradiation of the thyroid gland with I^{131} in the absence of the classic structural changes generally associated with injury from radiation. In the group of 23 hyperthyroid patients studied, 21 had received radioiodine in therapeutic doses and all of these 21 became euthyroid.

B. L. FRANK

A Program of Medical Treatment for Chronic Ulcerative Colitis.

MORRISON, L. M.: REV. GASTROENTEROL., 20: 744, 1953.

The author subscribes to the view that the great majority of patients suffering from chronic ulcerative colitis can be satisfactorily maintained by "medical" treatment, which is based on: (1) the oral administration of Azopyrine; (2) the oral administration of cortisone or the intramuscular use of ACTH; (3) psychotherapy.

Over 60 patients were treated during the past three years with 1.5 gm. of Azopyrine by mouth every three hours for a two-week course. Following a rest of two weeks in most cases, the course was repeated once or twice as indicated by the progress of the patient. Many cases did best when the drug was tapered off after the first two weeks of treatment. In approximately two-thirds

of patients who had previously failed to respond to standard colitis therapy now in use, Azopyrine was effective in controlling the disease. There were no serious toxic reactions or complications. Patiencs who failed to respond to Azopyrine were often found to be responsive to ACTH or cortisone. Relapses, however, frequently occurred and dangerous complications, such as perforation, peritonitis, psychosis, suicides, Cushing's syndrome, have been observed. Carefully directed and properly selected psychotherapy was a valuable and integral part of the treatment.

B. L. FRANK

INDUSTRIAL MEDICINE

Epileptics in Industry.

ARTHUR, J.: INDUST. WELFARE AND PERSONNEL MANAGEMENT, 35: 6, 1954.

The stigma of the disease has dogged the epileptic from ancient times until the present century when society still is far from accepting him as a disabled human being and nothing more. That his employment is within the realms of possibility is a recent consideration. Views on the subject are presented in this article.

The unhelpful attitude of the public is significant. It should be recognized that most epileptics are much less severely handicapped than men who have lost a limb but whose employability was never in question. Job selection is of particular importance. With the epileptic a balanced emotional state is essential. Should the mental harmony be disturbed a fit is often the result whereas a harmonious environment will lead to a definite improvement in the epileptic condition. The epileptic should be treated in the same way as his workmates and his employment does not necessitate reorganization of the workshop. Certain jobs are unsuitable. These include trades which require the direct operation of fast-moving machines, and those which demand the climbing of high ladders, scaffolding or buildings, also jobs in smelting works or vat work of any kind. In the majority of cases there is adequate warning of an incipient attack and the risk therefore of accidents occurring from the normal use of wood-working tools, sewing machines, etc. is scarcely higher than it is for the normal person.

The author indicates the need for understanding and tolerance of employers and workmates. In his opinion many more epileptics could be included in the labour force and, with help and understanding would prove to be happy and useful members of the community.

MARGARET H. WILTON

Tuberculosis Control in Industry.

VONACHEN, H. A., KRONENBERG, M. H. AND MORSE, D.: INDUST. MED., 23: 9, 1954.

That tuberculosis control in industry should be made an integral part of an over-all health and accident-prevention programme, and not considered a separate problem in itself, is indicated in this article. The authors present their views on certain features of tuberculosis control measures in industry, illustrating by reference to the experience of the Caterpillar Tractor Company, Peoria, Illinois.

Pre-employment x-rays.—The x-ray has proven its value to the individual, to his fellow-workers, to the insurance underwriters, and to the company. Furthermore, the pre-employment x-ray is an excellent case-finding method of tremendous importance to any community. It leads also to the discovery of many other conditions.

Periodic x-ray check-up of employees.—In the authors' opinion, foundry workers, grinders, and all those showing definite lung pathology should be required to have periodic x-ray check-ups. All cases of arrested or suspected tuberculosis must have periodic chest and x-ray examinations. Statistics from the Caterpillar Tractor Company of surveys taken in 1944, 1947 and 1951 show that 22 active cases of tuberculosis were discovered in 1944, two in 1947 and only one in 1951. Since September 1945 the company had had compulsory pre-employment x-rays.

No discrimination against hiring ex-Tb. patients.—With proper job placement it has been the experience of the industries in the Peoria area that the risk of hiring "ex-san" patients is very small and that there has been no abnormal loss by insurance companies. In a six-year period Caterpillar Tractor Company hired 103 cases of arrested or inactive tuberculosis. Of these only three have broken down. Reference is made to the contribution made by the highly organized rehabilitation departments existing in most sanatoria.

Job placement under medical supervision.—An effective job placement procedure is a fraternity of effort including the family physician, the industrial physician, the personnel director, the supervisors, foremen and safety engineers. The industrial physician must consider both the job and the work area. For example, arrested cases of tuberculosis should not be assigned to the foundry or anywhere where there is excessive dust (whether this dust is silica or not). They should not be engaged in sanding operations, grinding, welding or heavy labour, in places where there are extreme temperature changes or in damp locations.

Tuberculosis health education.—The importance of tuberculosis health education as part of a general over-all health and accident education programme, is stressed. The authors indicate the value of such media as pamphlets and other literature, posters, announcements at meetings and frequently a personal letter from management to each employee. Co-operation of the industrial medical units of local health departments, tuberculosis agencies, and family physicians, is important.

MARGARET H. WILTON

FORTHCOMING MEETINGS

CANADA

INTERNATIONAL CONFERENCE ON GROUP PSYCHOTHERAPY, Toronto, Ont. (Dr. Wilfred C. Hulse, Chairman. International Committee on Group Psychotherapy, 110 West 96th Street, New York 25, N.Y.) August 12-19, 1954.

INTERNATIONAL CONGRESS ON CHILD PSYCHIATRY, University of Toronto, Toronto, Ont. (Miss Helen Speyer, Executive Officer, International Association for Child Psychiatry, 1790 Broadway, New York 19, N.Y) August 13-14, 1954.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, University of Toronto, Toronto, Ont. (The Executive Officer, Fifth International Congress on Mental Health, 111 St. George Street, Toronto, Ont.) August 14-21, 1954.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY, Montreal, Que. (Dr. G. Stuart Ramsey, Associate Secretary, Physical Sciences Centre, McGill University, Montreal 2, Que.) September 9-11, 1954.

INDUSTRIAL MEDICAL ASSOCIATION OF THE PROVINCE OF QUEBEC, AND THE INDUSTRIAL SECTION OF THE ONTARIO MEDICAL ASSOCIATION, Joint Meeting, Ottawa, Ont. (Dr. W. F. Prendergast, Secretary of the Section of Industrial Medicine, 22 Commercial Road, Leaside, Toronto 17, Ont.) September 23-25, 1954.

UNITED STATES

ANNUAL SYMPOSIUM ON TUBERCULOSIS AND OTHER CHRONIC PULMONARY DISEASES FOR GENERAL PRACTITIONERS, Saranac Lake, N.Y. (Dr. Richard P. Bellaire, P.O. Box 2, Saranac Lake, N.Y.) July 12-16, 1954.

INTERNATIONAL COLLEGE OF SURGEONS, Convention of the Canadian and American Sections, Chicago, Ill. (Dr. E. N. C. McAmmond, Secretary, Canadian Section, Suite 2, 1701 Broadway West, Vancouver 9, B.C.) September 7-10, 1954.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY, New York, N.Y. (Dr. William L. Benedict, Secretary-General, 100 First Avenue Building, Rochester, Minn.) September 12-17, 1954.

WORLD CONGRESS OF CARDIOLOGY, Washington, D.C. (Dr. L. W. Gorham, Secretary-General, Second World Congress of Cardiology, 44 East 23rd Street, New York 10, N.Y.) September 12-17, 1954.

INTERNATIONAL ANÆSTHESIA RESEARCH SOCIETY, Annual Congress, Los Angeles, Calif. (Dr. T. H. Seldon, Chairman, 102-110 Second Avenue, S.W., Rochester, Minn.) October 4-7, 1954.

NEW ENGLAND POSTGRADUATE ASSEMBLY, Boston, Mass. (Executive Secretary, R. St.B. Boyd, 22 Fenway, Boston 15, Mass.). October 25-27, 1954.

AMERICAN INSTITUTE OF DENTAL MEDICINE, 11th Annual Meeting, Palm Springs, Calif. (Executive Secretary, Miss Marion G. Lewis, 2240 Channing Way, Berkeley 4, Calif.). October 31-November 4, 1954.

AMERICAN DERMATOLOGICAL ASSOCIATION, Belleair, Florida. April 17-21, 1955.

OTHER COUNTRIES

IRISH MEDICAL ASSOCIATION, Annual Meeting, Killarney, Ireland. (Dr. P. J. Delaney, Medical Secretary, 10, Fitzwilliam Place, Dublin) July 7-10, 1954.

INTERNATIONAL GERONTOLOGICAL CONGRESS, London and Oxford, England. (Prof. R. E. Tunbridge, President, Department of Medicine, The University, Leeds, England) July 12-22, 1954.

INTERNATIONAL CONGRESS ON THROMBOSIS AND EMBOLISM, Basle, Switzerland. (Dr. W. Merz, Hon. Secretary, Gynæcological Clinic, University of Basle, Switzerland) July 15-19, 1954.

INTERNATIONAL CONGRESS FOR PSYCHOTHERAPY, Zürich, Switzerland. (Dr. H. K. Fierz, Secretary General, Theaterstrasse 12, Zürich 1, Switzerland) July 21-24, 1954.

INTERNATIONAL CANCER CONGRESS, Sao Paulo, Brazil. (Prof. A. Prudente, 171 rua Benjamin Constante, Sao Paulo, Brazil) July 23-29, 1954.

INTERNATIONAL CONGRESS ON OBSTETRICS AND GYNÆCOLOGY, Geneva, Switzerland. (Dr. H. de Watteville, President, Maternité, Hôpital Cantonal, Geneva, Switzerland) July 26-31, 1954.

THIRD INTERNATIONAL POLIOMYELITIS CONFERENCE, Rome, Italy. (Secretariat: 6 via Lucullo, Rome, Italy. Cable address: Inpolio, Rome.) September 6-10, 1954.

INTERNATIONAL CONGRESS OF INTERNAL MEDICINE, Stockholm, Sweden. (Secretariat of the Third International Congress of International Medicine, Karolinska sjukhuset, Stockholm 60, Sweden) September 15-18, 1954.

CONFERENCE OF THE INTERNATIONAL UNION AGAINST TUBERCULOSIS, Madrid, Spain. (Prof. Alix y Alix, Escuela di Tisiologia, Ciudad Universitaria, Madrid, Spain) September 26-October 2, 1954.

PAN-PACIFIC SURGICAL ASSOCIATION, Congress, Honolulu, Hawaii. (Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Young Building, Honolulu, Hawaii) October 7-8, 1954.

JAPAN MEDICAL CONGRESS, Kyoto, Japan. (Dr. M. Goto, Secretary General, University Hospital, Medical Faculty of Kyoto University, Kyoto, Japan) April 1-5, 1955.

INTERNATIONAL DIABETES FEDERATION, Cambridge, England. (Secretary, P. Duys, 33, Prinsegracht, The Hague.) July 4-8, 1955.

CONGRES DE LA LITHIASE URINAIRE, Evian, (Hte-Savoie), France. (Séc. Prof. Agr. Cl. Laroche, 16, rue Christophe-Colomb, Paris (8e), France) 2-4 septembre, 1955.

NEWS ITEMS

ALBERTA

Dr. A. Somerville of Edmonton, was elected president of the Canadian Public Health Association at its recent annual meeting.

The C.M.A. (Alberta Division) and the Alberta Association of Registered Nurses, arranged for a nursing course at the University of Alberta in connection with poliomyelitis. Thirty-five nurses attended from the province. It is expected that in the event of another scourge this summer trained personnel will be available throughout the province.

Dr. W. S. Anderson, president-elect of the C.M.A. (Alberta Division) together with Dr. E. F. Donald; Dr. R. L. Macbeth; Dr. E. F. Gain and Dr. W. Bramley-Moore, visited the medical societies at Lethbridge, Medicine Hat, Drumheller and Red Deer. Papers were presented by the local members and those on the travelling panel.

W. CARLETON WHITESIDE

BRITISH COLUMBIA

This year of grace will be a memorable one for British Columbia, medically speaking, since it is marked by two major medical events. The first is the graduation from the University of B.C. of the first class in Medicine to acquire the degree of M.D. from that University; the second, of course, the annual meeting of the Canadian Medical Association, held in Vancouver in June. One alone of these happenings would have made the year a notable one; that we should have both is almost an *embarras de richesse*.

The graduation ceremonies of the University of British Columbia included this year, for the first time, the capping of 54 men and women who have completed their final examinations in medicine successfully. The Medical Faculty of the University has, under the leadership of Dean Myron M. Weaver and as a result of the work of his Medical Faculty of more than 250 members, done a magnificent job.

A notable and very happy feature of this convocation was the bestowal by the University of the degree of D.Sc. (*honoris causa*) on three distinguished medical persons. The first was Dr. Ethlyn Trapp of Vancouver, whose work in radiological diagnosis and therapy, especially in connection with cancer, has made her an outstanding figure in this field of medicine. Dr. Trapp

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stands very high in the esteem of her fellows in medicine, as has been shown by the fact that some years ago she was elected president of the B.C. Medical Association, being the first woman to fill this office. She was chosen to deliver the Osler Lecture to the Vancouver Medical Association, and has many other honours to her credit.

Dr. Brock Chisholm, now a resident of British Columbia, was another recipient of this degree. Dr. Chisholm is a world figure in medicine, and his work with the World Health Organization of the United Nations is known and admired everywhere.

Dr. G. F. Strong, of Vancouver, was the third recipient of the degree. He is also an outstanding figure in Canadian medicine. His work as an internist and cardiologist has been of the highest order, and to this he has added an almost incredible record of public service. He was the chief instigator and organizer of the Western Society for Rehabilitation of Paralytics and Spastics; also of the B.C. Medical Research Institute. He has been President of the Community Chest of Greater Vancouver, and of the B.C. Cancer Institute. He is extremely active in medical organizations, and is the president of the Canadian Medical Association.

The Annual Meeting of the Vancouver Medical Association was held on May 5, 1954. The guest speaker on this occasion was Chief Walter Mulligan, of the Vancouver Police Department. The Chief gave a very delightful address, witty and informative, on "The Highlights of Municipal Police Problems."

This was followed by the reading of annual reports and the election of officers for the coming year. Dr. J. Howard Black was elected president, to succeed Dr. D. S. Munroe, while Dr. F. S. Hobbs became vice-president. The affairs of the Association were reported to be in very satisfactory condition.

The various reports given at the Annual Meeting of the Vancouver General Hospital Board of Directors, were of very great interest, not only to Vancouver citizens. In giving the annual address, Mr. A. E. Grauer, president of the Board, brought out some interesting facts and figures. Of the total number of inpatients treated during the year, 37,417, 38% came from areas of the province outside Vancouver, this high figure showing the character of the institution as "a medical centre serving the citizens of British Columbia," to quote the words of the report.

The work of the hospital is growing, and the bed capacity is quite obviously inadequate for full usefulness and efficiency. For the past five years the occupancy of beds has never been below 91%, and during the past year it was 95%. Mr. Grauer held out some hope that the long-promised building of 500 new beds would soon be an actuality.

Other reports were given by Mr. L. H. Hickernell, Director of the Hospital, Miss Helen M. King, Director of Nursing and others. The outpatient department of the hospital and the Emergency Department show continual increases in the amount of work done, and the Health Centre for Children is extremely busy.

Victoria has lost one of its oldest medical men, in the person of Dr. C. Denton Holmes, at the age of 86. Dr. Holmes has been practising medicine in Victoria for at least half a century, and was medical officer of Saanich for many years.

Under the leadership of Dr. G. W. J. Fiddes of the Indian Health Department, a medical team was sent during May to Telegraph, some 250 miles north of Prince Rupert, to combat a measles epidemic in that area. Some 45 white and Indian children have been stricken, and the epidemic has been severe, with only two nurses to handle the work.

Accompanying Dr. Fiddes will be Dr. V. Makin, a woman eye specialist, and an x-ray technician, Mr. George Eaton, of Prince Rupert.

North Vancouver is having trouble in finding space for its various health organizations. The North Vancouver General Hospital, in common with most other hospitals in B.C., is becoming more and more in urgent need of beds, working as it does in a rapidly growing area.

The North Shore Union Board of Health has hitherto worked in buildings and space provided by the Hospital, which is now forced to take over this space and to meet its own needs. The Board of Health has 10 public health nurses, two sanitarians, two unit clerks, unit supervisor Norah Armstrong, and two doctors, one whole time and one part time. This is a large and very active unit, and does a great deal of work among school children, whose numbers are growing steadily. Plans are being made to acquire land and buildings to house the Unit satisfactorily.

J. H. MACDERMOT

MANITOBA

The Department of Health and Public Welfare will increase its expenditure by 6.6% over 1953-54. This represents 19.8 cents of the provincial expenditure dollar or a total of $11,282,801. Provided for in this estimate is the new joint Federal-Provincial rehabilitation programme for disabled persons, and an increased coverage in Mothers' Allowances.

On April 30 the citizens of Transcona and district honoured Dr. Murdock Mackay in Transcona United Church at a testimonial celebration of his seventieth birthday. From his birthplace in Cape Breton he came west, taught school, then studied medicine and graduated in 1916. After service overseas as medical officer of the 221st Battalion, he practised briefly in Nova Scotia and then for the next 34 years in the railway town of Transcona. He delivered what are believed to be the only quadruplets in the province. He represented Springfield in the provincial legislature from 1927-1932, and was one-time leader of the Manitoba Liberal party.

A Greater Winnipeg Citizens' Polio Prevention Committee has been set up. The project before it is to ascertain whether there is a link between insects and poliomyelitis. Facilities for this research will be made available in the Department of Zoology, University of Manitoba, as Professor R. A. Wardle, head of the department, considers the project to be one of great importance. A sum of $20,000 must be raised to finance the project.

A general public health grant of $16,780 has been approved for research work now being carried on at the University of Manitoba under the direction of Dr. J. C. Wilt, bacteriologist. The project will apply devised procedures in carrying out poliomyelitis antibody surveys in selected groups of the local population. There will be collaboration with the virus laboratory at Ottawa and with the provincial laboratory.

Manitoba physicians are happy over the honour given to Dr. C. W. Burns in being granted the honorary degree of Doctor of Laws. For almost two years he has served as president of the Canadian Medical Association, a task which would have crushed most men but finds him still smiling.

Grace Hospital, Winnipeg, has been approved for postgraduate instruction in obstetrics and gynæcology by the Royal College of Physicians and Surgeons of Canada.

Thomas W. Milroy, F.R.C.S.(C.), and James R. Mitchell have been added to the honorary attending staff of Grace Hospital.

The town of Minnedosa has requested to be added to the Neepawa health unit and also wants the laboratory and x-ray facilities of the health unit scheme.

The Minister of Health has stated that applications from a number of municipalities for health unit services will be considered further when additional technical staff is available.

Manitoba is pleased to learn that the annual meeting of the Royal College of Physicians and Surgeons of Canada will be held in Winnipeg on October 22 and 23. This will be the first time that the College has held its annual meeting in Western Canada.

Dr. R. G. Cadham, deputy medical health officer of Winnipeg, has reported that there were only 16 deaths from pulmonary tuberculosis in the city during 1953. To show the precipitous drop in mortality from this disease, he stated that this represents a rate of 6.3 per 100,000, whereas in 1920 the rate was 71.7 per 100,000.

While attending the American College of Surgeons International Congress in Sao Paulo, Brazil, Dr. S. S. Peikoff of Winnipeg was awarded a Peruvian Fellowship and the Brazilian Academy of Science Fellowship.

Dental students from Manitoba will be eligible for bursaries under the Dr. E. W. Montgomery scholarship fund granted by the provincial government.

ROSS MITCHELL

NEW BRUNSWICK

At the April meeting of the Saint John Medical Society, Dr. J. P. McInerney, chairman of the Committee on Tariff of the New Brunswick Medical Society, acted as referee in a debate on the motion—"Resolved that the distribution of the medical dollar earned by various groups of the medical profession in private practice is just and equitable." For the affirmative: Dr. Joseph Tanzman; Dr. F. C. Jennings; and Dr. W. D. Miller. For the negative: Dr. F. C. George; Dr. S. H. Weyman; and Dr. S. D. Clark.

A certain amount of sniping from the floor was allowed. Memories of the oratory and reputed facts presented are vague but some facts emerged. First, that the medical dollars are too few and too small; formerly, the old flat metal disc dollar of silver would stay put for a little while and made a satisfactory weight in the pocket, whereas the present dollar runs away like a polished ball bearing or burns up as it momentarily touches one's fingers. No conclusions were reached but an excellent evening of wit and innuendo was enjoyed.

Dr. L. DeV. Chipman received an honorary degree of Doctor of Civil Law at the Convocation of Acadia University at Wolfville, N.S. For many years Dr. Chipman was Chief of Service in the Eye, Ear, Nose and Throat Department of the Saint John General Hospital.

Dr. J. Gilbert Turner, executive director of the Royal Victoria Hospital, Montreal and a distinguished New Brunswicker, delivered the alumni address at the University of New Brunswick Annual Encaenial Dinner. His address on medical care stressed that the burden must be shared by individuals, hospitals, doctors, insurance plans and the government.

Dr. W. Blair Orser of Hartland, N.B., received the Murray MacLaren Prize at the Convocation of Dalhousie Medical School. This honour was won by Dr. Orser while an intern at the Saint John General Hospital.

Dr. Walter J. Fisher has returned from Saint Louis, Missouri, where he attended meetings of the American Psychiatric Association, and the Electro-Shock Research Association.

Dr. Leigh Ramsay has received a temporary appointment to the Eye, Ear, Nose and Throat Department of the Saint John General Hospital.

Dr. Edward J. Tabah, surgeon of the Royal Victoria Hospital, who has recently returned to Montreal after a four year period of work at the Cancer Memorial Hospital in New York, addressed three meetings in New Brunswick at Campbellton, Moncton and Saint John on the subject, "Cancer of the Head and Neck: The problem of Early Diagnosis and Treatment." Dr. Tabah's visit was of great interest to his audiences. His trip to the province was sponsored by the New Brunswick Division of the Canadian Cancer Society and the New Brunswick Medical Society.

Prof. William Y. Smith, chief of the Department of Economics at the University of New Brunswick, was the guest speaker at the annual meeting of the Saint John Medical Society. He reviewed the history and present promise in the New Brunswick economy with emphasis on power development, base metal prospects and forest resources.

A. S. KIRKLAND

NOVA SCOTIA

Dr. R. O. Jones, Professor of Psychiatry, Dalhousie University, has been appointed to a five-member Royal Commission to study possible changes in the Canadian criminal code dealing with defence of insanity. This commission will open its hearings in the Atlantic provinces in June.

Dalhousie University graduated 53 new medical doctors at this year's spring convocation. Dr. Athol Roberts of Southport, P.E.I., was the recipient of the Victoria General Hospital prize and Irven Koven was awarded the V.G. staff prize. Charles H. Graham of Charlottetown received the Halifax Infirmary prize and W. A. Richards was given the staff prize at the same hospital.

Citizens of Hantsport, N.S. and surrounding districts turned out in large numbers to honour Dr. Lynn E. Bashow and Mrs. Bashow on the eve of their departure from town following seven years' service to the people. Dr. Bashow came to Hantsport following three years' overseas service in the army during World War II and now leaves for Toronto where he will enter the field of physical medicine. His practice at Hantsport will be taken over by Dr. G. Kenny.

Dr. Clarence M. Miller was honoured by his colleagues in the medical profession when he was guest of the Pictou County Medical Society at a banquet at the Norfolk Hotel in recognition of his 50 years of service in the medical profession. A complimentary address was read by Dr. C. E. Stuart, president of the society, and mementoes were presented to the veteran medico in recognition of his golden anniversary as a medical practitioner. Dr. Miller, a native of Stellarton, graduated from McGill University in 1904 and took postgraduate studies at London, England, as a Fellow of the Royal College of Surgeons. He has been a resident of New Glasgow since his graduation and a member of the Aberdeen Hospital medical staff. He has served the hospital as chairman of the board of trustees and as a member for many years.

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Dr. Jane Heartz Bell was presented with a citation in recognition of her work in the many welfare agencies in the city, most particularly the Y.W.C.A., by the Y.W. Board. Dr. Bell has been associated with the Halifax Y.W.C.A. for nearly 40 years and has contributed greatly to its organization. She is past president of the association and serves on the board of directors as finance chairman. She is vitally interested in the betterment of girls and women in the city. Dr. Bell was born in Bridgetown, Nova Scotia. She received her premedical education at Mount Allison University and studied medicine at the Women's Medical College of the New York Infirmary, graduating in 1893. This college was established by Dr. Elizabeth Blackwell, the pioneer medical woman of that age. She did postgraduate work at Johns Hopkins University, under Sir William Osler. Dr. Bell then went to Chicago, where she practised for five years; much of this time was spent in clinical work. Dr. Bell studied German and was thus able to conduct a large German clinic. In 1898 she returned to Nova Scotia, following the death of Dr. Angwin, the first woman doctor in Halifax.

C. M. HARLOW

ONTARIO

More than 1,300 members registered at the 74th Annual Convention of the Ontario Medical Association held in Toronto. Officers elected were Dr. R. M. Mitchell, Sudbury, president; Dr. M. O. Klotz, Ottawa, president-elect; Dr. Carl Hill, Lansing, treasurer; Dr. M. C. Harvey, chairman of council. A pleasant feature of the installation of the president was the presence of his parents, the Rev. Robert A. Mitchell and his wife, the former Dr. Jenny Davis, who were missionaries in China where their son was born.

Life memberships were conferred on Dr. Elizabeth Bagshaw, Hamilton; Dr. H. M. Yelland, Peterborough; Dr. F. W. Hall, Chatham and Dr. J. M. Livingstone, Waterloo. The Banting Memorial Lecture on diabetes was given by Dr. Garfield G. Duncan, Clinical Professor of Medicine, Jefferson Medical College, Philadelphia. The Gordon Richards Memorial Lecture on "The Influence of Radioactive Isotopes in Medicine" was given by Dr. V. P. Collins, Professor of Radiology, Baylor University, Texas.

Dr. S. J. Hawkins, medical superintendent of Freeport Sanatorium, reported that there were no deaths from tuberculosis in 1953 in that institution.

Dr. C. D. Shaver, medical superintendent, Niagara Peninsula Sanatorium, has announced that a $200,000 addition will be built. The two-storey structure will house a number of workshops where selected patients will have an opportunity to earn a living within the sanatorium. These are the patients who are well enough to work but remain infectious and dangerous to the healthy population. To start with, the new building will provide one type of occupation, woodworking. The intention is not to compete with industry but to provide light work for the patients which may complement to a certain extent the industrial products.

Dr. H. Ian MacDonald has been elected president of the Academy of Medicine, Toronto. Dr. MacDonald is chief of the medical service of Sunnybrook Hospital and an associate professor of medicine.

Dr. John A. MacLaren, Department of Microbiology, Rutgers University, addressed the Physiological Society of Toronto on Antifungal Antibiotics.

Dr. A. C. Fisher, consultant surgeon for several copper mines in Southern Rhodesia, recently visited clinics in Toronto to observe the work done in traumatic surgery.

Three staff members of the University of Toronto's department of anæsthesia have been elected to fellowships in the faculty of anæsthesia of the Royal College of Surgeons of England. They are Professor S. M. Campbell, head of the department and chief anæsthetist at the Toronto General Hospital, Dr. Shirley Fleming and Dr. R. A. Gordon, clinical teachers and members of the TGH staff.

Bronchogenic carcinoma was the subject of a report at staff rounds, Sunnybrook Hospital. Between July 1949 and April 1954 there were 224 deaths from this condition. When first seen 36 of these cases were considered suitable for surgery but on thoracotomy 18 were found to be too far advanced to be resected. From the study of these cases the conclusion was reached that a single lesion in the lung found in a person over 40 which on planograph examination is found not to contain calcium should be at once explored. The best surgical treatment is wedge resection, that is the taking of a big biopsy. If, on immediate examination, this proves to be malignant, lobectomy can be proceeded with but if an opinion cannot be given by the pathologist at once the section may be studied; if it is shown to be malignant, the surgeon can operate again in a few days and perform a lobectomy.

Last year the Ontario Society for Crippled Children assisted 4,363 patients. About 1,790 appliances were provided. Wheelchairs were made available and transportation and hospital fees were arranged either by the society or by local service clubs.

Dr. J. A. Dauphinee, Toronto, has been elected president of the College of Physicians and Surgeons of Ontario.

Dr. D. E. Staunton Wishart, Toronto, has been elected president of the American Otological Society.

Dr. D. A. Scott, Toronto, has been awarded the Flavelle Medal by the Royal Society of Canada for his work on insulin.

The first sod has been turned for the new 13-storey central building of the Toronto General Hospital which will cost $10,000,000 and will provide new central operating theatres, x-ray department, laboratories, an emergency department and 325 more beds.

LILLIAN A. CHASE

QUEBEC

HUGHLINGS JACKSON MEMORIAL LECTURE

On May 18, Montreal was honoured by the visit of Prof. Théophile Alajouanine, professor of clinical neurology at the Salpêtrière, Paris, to deliver the Hughlings Jackson Memorial Lecture at the Montreal Neurological Institute. Prof. Alajouanine, who may be regarded as the leader of French neurology, gave a clear exposition of some aspects of aphasia, in an English prose style which would put to shame many British-born orators. Basing his address on a study of over 300 cases of aphasia, Prof. Alajouanine dealt particularly with verbal stereotypy, agrammatism, and jargon aphasia. At the close of his lecture, the speaker was presented by Dr. Wilder Penfield with a bound volume of the works of Hughlings Jackson.

The Annual Meeting of the Montreal Medico-Chirurgical Society was held on May 21. Dr. Graham Ross, retiring president, spoke about the changing pattern of contagious disease. Occupancy of beds at the Alexandra

Hospital for Contagious Diseases has gone down considerably in recent years. Factors contributing to this trend include lowered admissions for diphtheria and erysipelas, shorter hospitalization due to more effective treatment and a shorter isolation required by the city. Reviewing the work of the hospital for the last half century, Dr. Ross noted that bacterial diseases have gradually been controlled by preventive measures and improved methods of treatment. Virus diseases, however, such as mumps, chickenpox and measles, were still to a great extent unchecked.

Dr. J. W. McKay was elected president of the Society for the coming year. Other officers elected were: Dr. W. J. McNally, vice-president; Dr. E. M. Crawford, trustee; Dr. A. H. Neufeld, honorary treasurer; and Dr. McIver Smith, honorary secretary.

The Annual Meeting of the American Association of Thoracic Surgery was held in Montreal from May 5 to 7. Nearly 1,000 chest surgeons registered for the meeting which was most successful. All the papers, as well as the exhibits, tended to re-emphasize the tremendous advances that have been made since the Association was founded in 1917. Technique is only one factor in chest surgery. The anæsthetist, the physiologist, the biochemist and the bacteriologist have all contributed their discoveries. Today surgery of the lung and surgery of the heart are accepted techniques. Much remains to be learned, however. The situation in regard to cancer of the lung is a good example of this, and this was amply reaffirmed at the meeting. Medical science's never-ending battle to conquer disease—from years of trial and error in experimental laboratories to a solution that finally provides a "cure"—was well illustrated during the three-day convention.

The Bruchesi Institute of Montreal has begun construction of a new $1,000,000 building on Rachel Street. The building will be ready early in 1955 and will provide ample space for the organization's offices, clinics and additional accommodation for the staff.

Last year this institute kept in close touch with 4,204 families, 8,815 patients and 15,600 tuberculosis contacts. Nurses paid 5,355 visits to homes. Dr. Gaetan Jarry, medical director, also emphasized that consultations increased by 29% last year, a rise of about 14,000. He pointed out that hospitalization of active tuberculosis cases is still problem number one. However, recent progress in the field of therapeutics has greatly facilitated the efficient treatment of patients until they are hospitalized.

Dr. Fernand Hebert, medical director of the Sacred Heart Hospital, reported satisfactory progress at their annual meeting on May 28. The hospital has 900 beds, 282 for orthopædic cases and 612 for tuberculosis cases. In 1952, records show that 83% of the patients treated at this hospital were "cured." In 1953, the percentage rose to 89.

At the annual meeting of the Montreal Neurological Institute on May 19, Dr. Wilder Penfield announced some staff changes that will be of interest to the many friends of this Institute. Dr. Penfield is giving up some of the heavy work that he has carried for many years. He remains, however, as director of the institute. Dr. Theodore Rasmussen will return from Chicago to occupy the chair of neurology and neurosurgery which Dr. Penfield is giving up. Dr. William Cone will succeed Dr. Penfield as head of the neurology department at Royal Victoria Hospital and will continue as neurosurgeon-in-chief at the Montreal Neurological Institute, while Dr. Francis McNaughton continues as M.N.I. neurologist-in-chief. Dr. Preston Robb fills the new post of assistant director in charge of hospitalization.

Dr. Wesley Bourne who came to McGill to study medicine 45 years ago and since then has been closely associated with the university received special tribute at McGill's convocation ceremony on May 26. He becomes emeritus professor in the department of anæsthesia, which he founded in 1942. Dr. Bourne, a pioneer in the science of anæsthesia, has received many honours in his long career. Perhaps the one he remembers best is the Hickson Medal, awarded him in 1935 by the Royal Society of Medicine in England. This was the first ever given.

Dr. J. S. L. Browne, professor of medicine and chairman of the department at McGill, and director of the University Clinic at the Royal Victoria Hospital, was given the honorary degree of Doctor of Laws by Queen's University at the convocation in Kingston on June 5.

Dr. Kenneth A. Evelyn, one of McGill's well-known researchers, will take over three new posts this summer in Vancouver. He will serve as research professor of medicine at the University of B.C., director of the B.C. Medical Research Institute and senior physician to the Vancouver General Hospital. Dr. Evelyn has had an outstanding academic and research career. Last year he was granted the Theodore C. Lyster award by the Aero-Medical Association of the United States in recognition of his war research. Upon demobilization he went to Harvard and commenced his research in hypertension, a field he developed at McGill in his capacity as associate professor of medicine and director of the Research Institute of Biophysics. Your reporter joins his many other friends in Montreal in wishing him success in this new undertaking.

A. H. NEUFELD

SASKATCHEWAN

The Royal Commission on the Criminal Law Relating to Criminal Sexual Psychopaths, under the chairmanship of the Honourable J. C. McRuer, C.J.H.C., expects to sit in Regina on or about September 7 next to inquire into and report upon the question whether the criminal law of Canada relating to criminal sexual psychopaths should be amended in any respect and, if so, in what manner and to what extent.

The Commission desires to hear representations from members of the medical profession in Saskatchewan on this subject, and it would therefore be appreciated if those who wish to make representation would submit a summary thereof in the form of a brief to the secretary on or about August 15. The secretary is Mr. R. N. Dickson, Room 1315, 67 Yonge Street, Toronto 1, Ontario.

Under the chairmanship of the Honourable J. C. McRuer, C.J.H.C., a Royal Commission on the Law of Insanity as a Defence in Criminal Cases has been appointed to inquire into and report upon the question whether the criminal law of Canada relating to the defence of insanity should be amended in any respect, and, if so, in what manner and to what extent. This Commission expects to sit in Regina on or about September 7 next, the exact time and place of sitting to be announced subsequently through the public press of Regina.

The Commission desires to hear representations from members of the medical profession in Saskatchewan on this subject. Those who wish to make representations are invited to submit a summary thereof in the form of a brief to the secretary, Mr. R. N. Dickson, Room 1315, 67 Yonge Street, Toronto 1, Ontario, on or before August 15.

A Federal grant of $6,000 to enable the Rockglen Union Hospital to provide six active treatment beds in a new building has been approved under the National Health Program. The existing hospital is a two-storey frame nursing home built in 1928. It has been declared unfit for hospital use by the Provincial Health Department and a modern one-storey structure is to replace it.

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Sir Henry Dale of London, England, Chairman of the Wellcome Trust, while on a lecture tour stopped off in Saskatoon to visit his son, Dr. R. H. Dale. Sir Henry will be remembered for his work on histamine and nerve impulse transmission, and his researches into shock.

On Friday, May 7, at the Hotel Saskatchewan, Regina, the Regina and District Medical Society and Lederle Laboratories sponsored a symposium on Acute Infectious Diseases. A large number of Saskatchewan physicians and their wives were invited to attend this meeting, and as a result over 228 Saskatchewan doctors registered. At the noon luncheon 360 physicians and their wives were present as guests. An afternoon social programme was arranged for the ladies, and a reception was held that evening for the guest speakers, special guests, the physicians and their wives. On Thursday, the evening prior to the symposium, the Regina and District Medical Society held their monthly meeting at the Hotel and all the physicians in attendance were invited. Dr. L. E. Cowan, President of the Regina and District Medical Society was Chairman, and the special speaker was Dean J. W. Macleod of the University of Saskatchewan.

On Saturday morning, May 8, the meeting concluded with grand rounds at the Regina General Hospital under the Chairmanship of Dr. M. G. Israels.

The Honourable T. J. Bentley recently announced that new patient and passenger rates for out-of-province air ambulance flights went into effect on April 15. Patients carried to points outside the province will now be charged 35c per air mile over the shortest navigable route from base to point of departure of the patient, to the out-of-province destination and the return of the aircraft to its home base. Formerly, the patient paid 35c per air mile from where he was picked up, to his destination. A passenger accompanying a patient on a flight outside Saskatchewan will be charged at the rate of 15c per air mile over the distance actually travelled. Formerly, such passengers paid a rate of 7c per air mile one way.

No change is being made on the in-province flight rate schedule which remains at $25.00 per patient flight, and $10.00 per passenger, regardless of distance.

During the month of March, a total of 18,837 miles was covered by the Saskatchewan Air Ambulance aircraft. This involved a flying time of 129.25 hours. The service completed a total of 47 flights during March, 28 from the Regina base and 19 from the auxiliary base at Saskatoon. Seven out-of-province flights were completed, three to Winnipeg, one to Tacoma, Washington, one to Minot, North Dakota, one to Calgary, and one to Rochester, Minnesota.

The ailments of patients transported by Air Ambulance in March were listed in the following classifications: fractures and injuries, 14; poliomyelitis, 1; brain conditions, 6; cancer, 2; cardiac conditions, 4; obstetrical complications, 1; cardiovascular and blood conditions, 3; genito-urinary diseases, 4; gastro-intestinal diseases, 5; prematurity, 2; pulmonary and thoracic diseases, 4; postoperative complications, 1.

Kincaid's new hospital was officially opened on April 28 by the Honourable T. J. Bentley. This hospital, built at a cost of $130,000.00, will replace the old Community Hospital that had served Hazenmore, Kincaid, Meyronne, and the surrounding districts since 1931. Funds for the construction of the building were raised by debenture issue of $70,000.00, cash donations of $11,500.00, and provincial and federal government grants.

On Wednesday, May 26, an open meeting was held in the Medical Building, University of Saskatchewan, when Russell Fraser, M.B., Ch.B. (New Zealand), M.R.C.P., Reader in Medicine, Postgraduate Medical School of London and Physician, Hammersmith Hospital, spoke on "Anti-thyroid Drugs, Their Mode of Action and Therapeutic Use."

G. W. PEACOCK

NEWS OF THE MEDICAL SERVICES

Canadian Armed Forces

The Royal Canadian Navy has announced several changes in appointments of Medical Officers to take place during the summer months:

(a) Surgeon Commander W. J. Elliott and R. A. G. Lane who are completing two year specialist courses in the United States, are being appointed as the Principal Medical Officers, H.M.C.S. *Stadacona,* Halifax, N.S., and in the aircraft carrier H.M.C.S. *Magnificent,* respectively. (b) Surgeon Commander R. H. Roberts, R.C.N., at present Principal Medical Officer, H.M.C.S. *Stadacona,* Halifax, N.S., will be proceeding to the United Kingdom for a course in the London Post Graduate School of Medicine, (c) Surgeon Commander J. W. Rogers, R.C.N., is to become Principal Medical Officer, H.M.C.S. *Cornwallis,* Cornwallis, N.S.; his present position as Principal Medical Officer, R.C.N. Hospital, Victoria, B.C., will be filled by Surgeon Commander J. C. Gray, D.S.C., R.C.N. (d) Surgeon Lieutenant J. D. Medhurst, D.P.H., R.C.N., will go from Cornwallis, N.S., to Victoria, B.C., to fill the post of Staff Officer (Hygiene) for the Pacific Command.

Other appointments to sea are:

(a) Surgeon Lieutenant D. J. Kidd, R.C.N., to the new icebreaker H.M.C.S. *Labrador* on commissioning. (b) Surgeon Lieutenant C. N. Whittle to the destroyer *Iroquois.*

Lieut.-Col. A. F. Nancekivell, R.C.A.M.C., has been appointed Officer Commanding, Canadian Section, Section, British Commonwealth General Hospital in Kure, Japan. He exchanged duties with Lieut.-Col. W. H. R. Croskery, R.C.A.M.C., who assumed the appointment of medical specialist at Montreal Military Hospital.

Capt. D. J. Chapman, R.C.A.M.C., of the staff of Kingston Military Hospital has been certified by the Royal College of Physicians and Surgeons of Canada as a specialist in Diagnostic Radiology.

Lieut.-Col. C. B. Caswell, O.B.E., M.C., C.D., R.C.A.M.C., now an assistant medical director in the office of the Director General of Medical Services, Army Headquarters, has been selected to attend a one-year postgraduate course in public health at the University of Toronto. Lieut.-Col. J. W. B. Barr, C.D., R.C.A.M.C., now commanding officer No. 2 Canadian Field Ambulance, R.C.A.M.C., in Germany will return to Canada in August and take over Lieut.-Col. Caswell's present appointment with the D.G.M.S.

The following officers (Army), attended the Canadian Medical Association meeting in Vancouver, June, 1954: Brigadier K. A. Hunter; Colonel J. E. Andrew; Lieut.-Col. A. B. C. Powell; Major A. M. Davidson.

Air Commodore A. A. G. Corbet, Director of Medical Services (Air), Group Captain D. G. M. Nelson and Group Captain G. D. Calbrick attended the 25th Meeting of the Advisory Medical Committee in Toronto June 5 and 6, 1954. The meeting was under the chairmanship of G./C. F. A. L. Mathewson of Winnipeg, Consultant in Cardiology to the R.C.A.F.

Group Captain J. A. Mahoney has been recently transferred to the R.C.A.F. Station Rockcliffe as Senior Medical Officer.

The following R.C.A.F. Medical Officers attended the Canadian Medical Association meeting in Vancouver, June 1954: Air Commodore A. A. G. Corbet; Wing Commander J. C. Wickett; Wing Commander J. R. Jackson.

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NEWS AND NOTES

We are glad to note that on May 19 the University of Manitoba conferred the Honorary Degree of LL.D. on Dr. Charles W. Burns, president of our Association.

NEW TYPE OF THERAPY IN RHEUMATISM

Blackberg and Walker (*Clin. Med.*, **61**: 118, 1954) review the effects of two widespread components of enzyme systems—cyanocobalamin and adenosine-5-monophosphate (AMP)—with special reference to treatment of rheumatic disorders. AMP gave good results in 54 out of 60 cases of tendinitis, according to Rottino, and this experience was confirmed by Susinno and Verdon in a controlled study of 53 cases of calcified tendinitis, in which 44 were significantly improved subjectively and objectively. French authors have reported good results, comparable with those from ACTH, on rheumatoid arthritis.

Hallahan had reported dramatic results from cyanocobalamin in subdeltoid bursitis, and Blackberg *et al.* tried combined treatment by injection of a product Cobaden, containing cyanocobalamin and AMP, in a series of 70 cases of such rheumatic disorders as osteoarthritis, tendinitis and polyarthritis. In 66 of the 70 cases pain was relieved, mobility improved, and swelling and tenderness diminished.

PROBLEMS OF SEX

The April issue of the *Practitioner* contains a most interesting symposium on sex and its problems, not only in relation to the individual but also in relation to society—with reference, of course, particularly to the United Kingdom. Contributors are mostly medical men, but also include representatives of the Church of England, the magistracy and the police. The non-medical contributions are of interest but are unfortunately not particularly helpful. The practitioner will derive considerable benefit from Dr. Malleson's detailed explanation of the treatment of vaginismus, and Dr. Stafford-Clark's article on impotence. In both these conditions, the family doctor can do much to avert impending marital disaster. The problems of adolescence, whose extent and gravity are still so commonly underestimated, are dealt with sympathetically and sensibly by Dr. Griffith.

(Continued on page 64 of the advertising section)

BOOK REVIEWS

CLINICAL GENETICS

Edited by A. Sorsby, Research Professor in Ophthalmology, Royal College of Surgeons of England and Royal Eye Hospital, London. 580 pp. illust. $18.00. Butterworth & Co. (Canada) Ltd., Toronto 6, 1953.

The first part of this book is an appraisal of the genetic and environmental influences exerted on animals and especially humans. The first chapter by Sorsby seeks a satisfactory classification and suggests a threefold division into genetic, genetic influenced by environment and environmental. The difficulties in such a classification are obvious. Chapter 2 is concerned with penetrance and expressivity and gives the modern methods of explaining the gradations in individual structure and reaction and in addition the phenocopy. The carrier and its detection is dealt with in chapter 3. Chapter 10 gives the basis of genetic work by Koller on cytogenetics and Catchside on chemical substances while the final section by Sorsby leads from the general considerations of the first ten chapters to the more specific considerations of the clinical side. Section 2 (clinical) has as its background clinical entities or syndromes. The list of conditions is an impressive one, and need not be considered in a brief review but the conclusion on cancer gives the clue to the value of this book. One feels that only the surface of our necessary knowledge has been broached and that the great difficulty in assembling material, means that the evidence for almost any idealistic scheme may be found in the critical or faulty observations that have been used. Evidently the whole approach is that of the collector of detail without as yet much valid conclusion. A good beginning has been made in the fifty odd years (two generations) since human genetic studies became intensive.

CIBA FOUNDATION COLLOQUIA ON ENDOCRINOLOGY

Synthesis and Metabolism of Adrenocortical Steroids. Edited by G. E. W. Wolstenholme and Margaret P. Cameron; Consulting Editor for this Volume W. Klyne. Vol. VII, 297 pp. illust. 30s. J. & A. Churchill Ltd., London, W. 1; British Book Service (Canada) Ltd., Toronto, 1953.

This volume is highly technical and will be of interest to steroid chemists rather than physicians.

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TEXTBOOK OF PHYSIOLOGY AND BIOCHEMISTRY

G. H. Bell, Professor of Physiology in the University of St. Andrews at University College, Dundee; J. N. Davidson, Gardiner Professor of Physiological Chemistry in the University of Glasgow; and H. Scarborough, Professor of Medicine in the Welsh National School of Medicine of the University of Wales. 1002 pp. illust., 2nd ed., $8.50. E. & S. Livingstone Ltd., Edinburgh; The Macmillan Co. of Canada Ltd., Toronto 2, 1953.

The appearance of a second edition so soon after the first is an expression of the rapid progress which has been made in this field. In their selection of new material the authors have been guided by the advice of Alexander Pope, "Be not the first by whom the new are tried. Nor yet the last to lay the old aside." They have succeeded in keeping the book sufficiently abreast of modern developments without overshadowing the older and perhaps more basic matter. The collaboration of the three authors—a physiologist, a biochemist and a clinician—has again proved fruitful. The systematic building up of the subject matter, its well balanced text and excellent illustrations have secured the book a place of high preference among students of physiology.

COMPRESSION ARTHRODESIS

J. Charnley, Consultant Orthopædic Surgeon to Manchester Royal Infirmary; Park Hospital, Davyhulme. 264 pp. illust. $7.15. E. & S. Livingstone Ltd., Edinburgh; The Macmillan Co. of Canada Ltd., Toronto, 1953.

This volume presents a study of compression forces in relation to union of cancellous and cortical bone. Present ideas on the response of living bone to mechanical stress are critically analysed in an objective manner, on the basis of well recognized phenomena, and by reference to well known medical writings. Mr. Charnley then describes his own observations of union occurring under conditions of heavy compression, clearly elucidating all "new" observations with the assistance of diagrams, radiographs, and gross and microscopic sections. The most striking evidence presented is a photograph of a segment of cancellous bone trephined at the site of union of a knee arthrodesis four weeks after operation. This showed solid bony union between the trabeculæ with a very small amount of bone callus in evidence.

Theoretical considerations of the forces and pressures involved are ably presented by J. A. L. Matheson, Beyer Professor of Engineering, University of Manchester; and histological observations are given by Professor S. L. Baker of the Department of Rheumatism Research. These observations are then further considered in their application to Mr. Charnley's development of J. Albert Key's method of compression arthrodesis of the knee, in great detail. In subsequent chapters the same method is considered in its application to arthrodesis of many other joints.

The use of compression arthrodesis for the knee and ankle joints is shown to be a valuable procedure, giving promise of superseding all previous methods. Its use in the shoulder is worthy of consideration, but in the foot and elbow it is less impressive. In the hip joint, used with the technique of central dislocation, compression arthrodesis is incorporated in a new technique of arthrodesis of the hip which although fraught with many difficulties gives promise of obtaining a quick and reliable arthrodesis of this troublesome joint.

The lucidity of demonstration and reliance on the inductive method by this acute observer are very refreshing, and he may well stimulate many of us to deeper cogitation on the implications of our own experiences with the odd behaviour of this interesting substance, bone.

OPERATIVE GYNÆCOLOGY

R. W. Te Linde, Professor of Gynæcology, Johns Hopkins University and Chief Gynæcologist, Johns Hopkins Hospital. 902 pp. illust. 2nd ed. $20.00. J. B. Lippincott Company, Montreal, 1953.

This is a book of outstanding quality and achievement. Not only can it be regarded as the best American text on the subject, but also as one which can be compared favourably with any other similar text. The tremendous experience of the author is evident in every chapter, and his personal views add a stimulus for thought which is a deficiency of most standard textbooks. Moreover, one is impressed by the simplicity of diction and the beautiful clarity of every diagrammatic illustration. All photographs and photomicrographs are well chosen and typify the lesions being discussed. Operative procedures are clearly and precisely described and leave no doubts in the reader's mind.

Apart from being revised and brought up to date, this edition has been improved by the addition of several new chapters and many new illustrations. It is therefore excellent for reference by undergraduates and for guidance to postgraduates. It is a book which should be read by all who practise gynæcology.

DIAGNOSIS OF ACUTE ABDOMINAL PAIN

W. Requarth, Clinical Assistant Professor of Surgery, University of Illinois College of Medicine. 243 pp. illust. $5.00. The Year Book Publishers Inc., Chicago, Ill.; Burns & MacEachern, Toronto 2, 1953.

This book is primarily intended to serve the young surgeon but it makes profitable reading for anyone who is faced by the problems of acute abdominal emergencies, traumatic or otherwise. It emphasizes the division of such emergencies into those requiring immediate operation, those in which operation may be deferred and those in which operation should be done. Decisions of this sort often tax the clinical judgment of experienced surgeons. The value of laboratory studies is fully discussed and the conclusion drawn that estimation of serum amylase is the only one that can be depended upon to make a diagnosis certain in the cases to which it applies. A final chapter on diagnosis of abdominal lesions in children is particularly well done. There is a well chosen selection of illustrations throughout the text and each chapter has a bibliography appended. The expositions are clearly written and read smoothly. They are derived from a wealth of experience and wide reading. The book is highly recommended.

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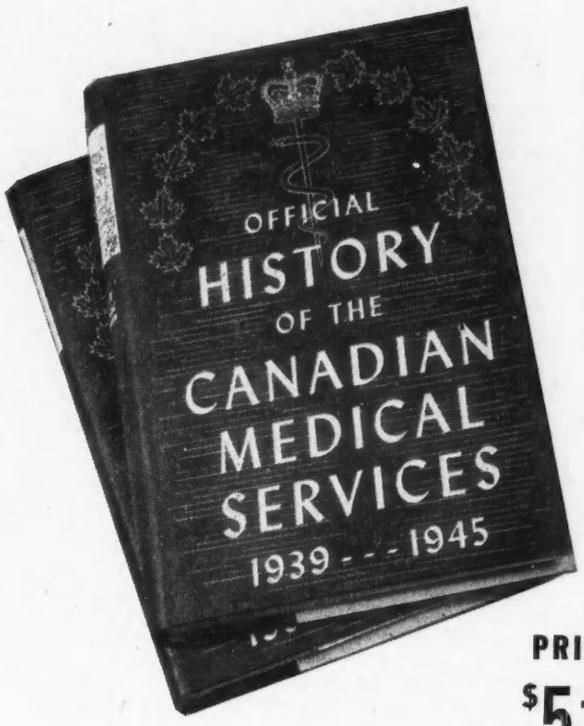

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THE CLASSIFICATION OF PULMONARY TUBERCULOSIS

M. Sekulich. 322 pp. illust. $12.75. William Heinemann Medical Books Ltd., London, England; British Book Service (Canada) Ltd., Toronto, 1953.

Starting with the concept that the roentgenographic picture of the resolution, or at least regression, of pulmonary lesions of tuberculous etiology is essentially the reverse of that of the evolution of these same lesions, the author built up the classification of pulmonary tuberculosis which he discusses in great detail in this volume. His classification, as he himself points out, differs from most classifications now in use in that it attempts to cover, (1) the type, (2) the extent, and (3) the degree of activity of the lesions. He divides tuberculous lesions into two types, namely, primary and post-primary; and into four pathological forms, namely, inflammatory, caseous, fibrocaseous and fibrous. He considers that primary tuberculosis consists of all of the lesions which develop during the acute phase of evolution of the primary complex. He regards only those developments which take place after the primary complex and its associated lesions have become quiescent or healed, as truly post-primary. This division of tuberculous lesions and the subsequent division of the primary-type lesions into two forms, namely, inflammatory and caseous; and of the post-primary lesions into two other forms, namely, fibrocaseous and fibrous, seems only to add to the difficulties involved in attempts to classify tuberculous lesions by type. Examination of some of the illustrative material in the text suggests that it is frequently necessary to follow up cases for long periods before attempting to classify their lesions as to type. The author of this volume deserves credit for the tremendous amount of work that he has put into it. Time alone will determine whether or not his proposed classification may some day become, as he hopes, a basis for a generally-accepted classification of tuberculosis.

CHRONIC PULMONARY EMPHYSEMA

Modern Medical Monographs No. 8. M. S. Segal, Clinical Professor of Medicine, Tufts College Medical School; and M. J. Dulfano, Resident, Department of Inhalational Therapy, Boston City Hospital. 180 pp. illust. $6.00. Grune & Stratton, New York; The Ryerson Press, Toronto, 1953.

This is one of a series that has recently appeared and which satisfies a definite need. The subject has become of current interest in view of the recent advances in research methods of both the cardiovascular and respiratory systems. The authors deal with it in an exhaustive manner. They review the classification of emphysema, and the theories as to its cause. Pulmonary function tests are described and their uses pointed out, with special reference to the clinical features. A chapter on carbon dioxide intoxication is introduced and discussed in some detail. This is a much needed section and should bring to the attention the dangers of oxygen therapy, a problem which is often not recognized. The cardiac aspect of emphysema is touched on, but not gone into in enough detail. The treatment of this complication is indicated.

The latter half of the book deals almost exclusively with treatment of the pulmonary disease *per se*. Symptomatic treatment, aerosols and infection, ACTH and cortisone, oxygen therapy and mechanical respiration, pneumoperitoneum and breathing exercises are all dealt with at some length. For those who wish to learn the most recent techniques, review the modern treatment and have at hand an excellent bibliography on the problem of emphysema, this book is essential.

Books Received

Books are acknowledged as received, but in some cases reviews will also be made in later issues.

Depression. Edited by P. H. Hock, New York State Psychiatric Institute; College of Physicians, Columbia University, New York City, and J. Zubin, New York State Psychiatric Institute; Department of Psychology, Columbia University, New York City. 276 pp. Illust. $6.00. Grune & Stratton, New York; The Ryerson Press, Toronto, 1954.

Nursing in Clinical Medicine. J. Jensen, Diplomate of American Board of Internal Medicine (Cardiovascular Disease) Formerly Assistant Professor in Medicine, Washington University, St. Louis, and D. Maclurg Jensen, Extension Instructor in Sociology and Nursing Education, University of Missouri, St. Louis. 888 pp. Illust. 4th ed. $5.50. The Macmillan Company, New York, Toronto, 1954.

Carcinoma of the Colon. L. S. McKittrick, Clinical Professor of Surgery Harvard Medical School. Surgeon-in-Chief, New England Deaconess Hospital. 94 pp. Illust. $3.75. Charles C. Thomas, Springfield. Illinois; The Ryerson Press, Toronto, 1954.

No Thought for Tomorrow. C. Jowett. 104 pp. Illust. $2.75. The Ryerson Press, Toronto, 1954.

Anoxia of the New-Born Infant. A Symposium organized by The Council for International Organizations of Medical Sciences. 230 pp. Illust. $6.50. Charles C. Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1953.

Cardiology for Nurses. W. Modell, Assistant Professor, Cornell University Medical College; and Doris R. Schwartz, Instructor, Cornell University-New York Hospital School of Nursing. 320 pp. $4.25. 2nd ed. Springer Publishing Company, Inc. New York, 10. 1954.

Clinical Electrocardiography. D. Scherf and L. J. Boyd, Associate Clinical Professor of Medicine, The New York Medical College. Flower and Fifth Avenue Hospitals. 490 pp. 4th ed. Revised. Illust. $8.50. William Heinemann Medical Books Ltd., London; British Book Service (Canada) Ltd., Toronto 6, 1953.

The Megaloblastic Anæmias. L. J. Davis, Muirhead Professor of Medicine in the University of Glasgow; and A. Brown, Senior Lecturer in Medicine in the University of Glasgow. 113 pp. Illust. $3.00. Charles C. Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1953.

The Uncommon Heart Diseases. N. E. Reich, Clinical Assistant Professor of Medicine State University of New York, College of Medicine. Associate Attending Physician, Kings County Hospital. 516 pp. Illust. $11.50. Charles C. Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1954.

The Fundamentals of X-Ray and Radium Physics. J. Selman, Director, School for X-ray Technicians, Tyler Junior College. Chief of Radiology, Mother Frances Hospital. 340 pp. Illust. $9.50. Charles C. Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1954.

Illustrated Review of Fracture Treatment. F. L. Liebolt, Attending Surgeon in Charge of Orthopedica, the New York Hospital; Attending Orthopedic Surgeon, Hospital for Special Surgery, Cornell University Medical College. 225 pp. Illust. $4.00. Lange Medical Publications, Los Altos, California, 1954.

A Curriculum for Schools of Medical Technology. I. Davidsohn, Professor of Pathology and Chairman of Department, Chicago Medical School. 122 pp. Illust. 3rd ed. Recommended by the Board of Registry of the American Society of Clinical Pathologists, Muncie, Indiana, 1953.

Emotions and Reason. V. J. McGill, Associate Professor of Psychology and Philosophy, Hunter College, New York City. 422 pp. $3.50. Charles C. Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1954.

A Formulary for External Therapy of the Skin. C. N. Frazier, Edward Wigglesworth Professor of Dermatology, Harvard Medical School; and I. H. Blank, Research Associate in Dermatology, Harvard Medical School. 118 pp. Illust. $3.50. Charles C. Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1954.

Cardiovascular Surgery. G. H. Pratt, Associate Clinical Professor of Surgery, New York University College of Medicine; Attending Surgeon and Chief of the Vascular Clinic, Saint Vincent's Hospital, City of New York. 842 pp. Illust. $15.00. Lea & Febiger, Philadelphia; The Macmillan Company of Canada Limited, Toronto, 1954.

Atlas of Exfoliative Cytology. G. N. Papanicolaou, Clinical Professor of Anatomy Emeritus, Cornell University Medical College. 56 pp. 36 Coloured Plates. $19.80. Harvard University Press, Cambridge, Mass.; S. J. Reginald Saunders & Co. Ltd., Toronto, 1954.

First Report on the Geographical and Geological Distribution of Carcinoma in the Netherlands. J. C. Diehl, Formerly Surgeon-general of the Royal Netherlands Army; and S. W. Tromp, Geological Consultant to the United Nations, T.A.A. 120 pp. $2.10. or Guilders 7,95. Foundation for the Study of Psycho-Physics, Hofbrouckerlaan 54, Oegstgeest (Leiden), Netherlands.

Clinical Medicine. R. D. Lawrence, Physician-in-Charge, Diabetic Department, King's College Hospital, London. 64 pp. 7/6d. H. K. Lewis & Co., Ltd., London, 1954.

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PNEUMONIA

By Hobart A. Reimann, Visiting Professor of Medicine, The American University, Beirut, Lebanon. A valuable compendium of many kinds of pneumonia, most attention being given to those kinds of greatest interest to the physician. **253 pages, 1954, $6.50.**

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(Continued on page 36)

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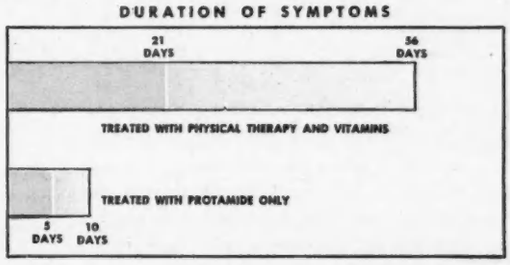

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From the *Journal* of July 1924

The Annual Meeting

"When you were there you were satisfied it was a success. Now that the excitement has died down and you have had time to contemplate at your leisure, are you of the same opinion? The Executive Committee desires your assistance in correcting faults and in developing the annual meeting to a high degree of proficiency.

Therefore we will welcome any criticism, destructive or constructive. Write to the Secretary, anonymously if you wish, but for purposes of identification and reply, enclose in a covering letter. The Secretary will bring all communications before the next meeting of the Executive. One criticism already expressed is that the programme was too full and there was little or no time for discussion of papers presented. Have you any others?"

Nova Scotia News

"A recent number of the *Halifax Herald* gives an interesting account of the situation created by the arrival of the ship *England* at Halifax, on April 9, 1866. A few days after this ship had left Queenstown, with more than 1,200 passengers, a death occurred which was attributed to Asiatic cholera. The disease spread rapidly amongst steerage passengers and crew, although the cabin passengers escaped. Fifty-six deaths had occurred before the ship reached Halifax, and fresh cases were appearing continually. Dr. J. H. Slayter, port quarantine officer, placed the ship in quarantine and associated himself with the two ship's physicians. The conditions were found to be so appalling that Dr. Slayter accepted the assistance volunteered by Doctors Garvie and Gossip and a brother of Dr. Garvie who was at that time a student in medicine. All of these went into voluntary quarantine, and not only worked assiduously in the endeavour to relieve the sufferings of those who were ill, but assisted in digging graves for those who died. They worked day and night, and shortly before midnight on April 17, while in the act of closing a coffin, Dr. Slayter collapsed and fell to the ground. James MacCormack, who resides at Halifax, was assisting Dr. Slayter at the time, and states that his face turned black almost instantly. He died at four o'clock the following morning with unmistakable symptoms of cholera. At the succeeding session of the provincial legislature Dr. (later Sir Charles) Tupper, in proposing a vote of money to Dr. Slayter's widow, made an eloquent reference to Dr. Slayter's devotion and heroism. Mr. MacCormack gives a vivid account of his experiences in connection with the infected ship. On boarding the vessel, scores of people were crawling about the decks, contorted into grotesque shapes by the terrible pain from which they were suffering. That night perhaps a hundred heavily weighted corpses were launched into the waters of the harbour. Later about two hundred were buried in the sands of Thrum Cap, while a hundred or more were interred in the southern part of MacNab's Island. Altogether nearly five hundred of those on board the *England* perished. Patrick Reardon, a Haligonian who had volunteered his services at the quarantine station, also died from the dread disease. Only a single case developed in the city, which rapidly proved fatal."

"The announcement comes from McGill University of two important appointments in the Department of Medicine—Professor Jonathan C. Meakins as Professor of Medicine and Director of the Department, as also head of the University clinic at the Royal Victoria Hospital; and Professor Campbell P. Howard of Iowa University as Professor of Medicine and Physician to the Montreal General Hospital."

British Columbia News

"The chiropractor is still with us, and judging by the results of the post mortem examination at an inquest held recently on a case of acute appendicitis, with abscess, he can hardly be called useful in cases of this kind."

"A short general account of the activities of the Association will be of interest to the profession. Our membership has increased from 121 in August, 1921, to a present membership of over 400. The first years of the Association, since its reorganization, have been beset by many difficulties and trials. The medical profession is notoriously difficult to organize, and the Association has experienced to the full the disadvantages of this fact, but there is evidence of an increasing tendency amongst the medical men of this province, and indeed of every province in Canada, towards unity. There can be no question of the absolute necessity for co-operation and unity. Every day of the year our business office is in contact with medical men who need help and support, and even as far as we have gone, notwithstanding all the difficulties incident on apathy and lack of union, this Association has been able to render very valuable help, both individually and collectively, to members of our profession in this province.

"As time goes by, and we learn to work more effectively together, there is no doubt that membership in this Association will be an absolute necessity to all medical men residing in the province. This is realized fully now, by the medical men practising outside of the big centres, where our provincial Association is the only organization to which they can belong, with any hope of practical advantage. In these outlying districts, our membership embraces very nearly 100% of the resident practitioners."

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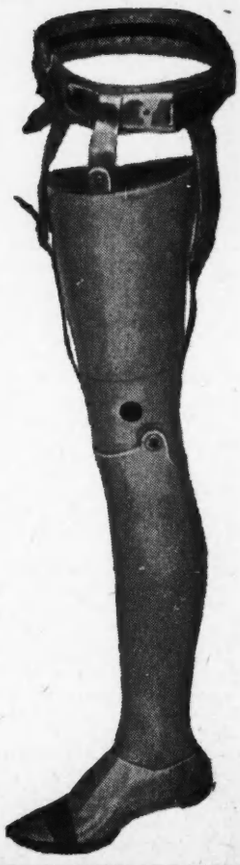

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NEWS AND NOTES

(Continued from page 66)

The ghost of Kinsey flits in and out of these pages; some authors treat the famous Reports with scorn, others quote them as authorities.

As might be expected from the recent stir in the English press, male homosexuality receives considerable attention. The Chief Constable of Nottingham goes so far as to say that this deviation "is beginning to eat into the very vitals of the nation like a cancer," basing his statement on the rise in convictions for offences. On the other hand, Neustatter, whose article on the subject is much more objective and helpful, says that "the fear that a moral rot is setting in in this country hardly seems justified." This view is much more likely to be right; an increase in convictions for sexual offences very likely indicates an increase in zeal and vigilance on the part of the police.

Throughout this symposium, although the need for medical help in solving problems of sex is clearly stated, the point of view is also stressed that if an individual wants to enjoy to the full the benefits of civilized society he must pay the price of conformity to its laws and customs.

INTERNATIONAL CHILDREN'S CENTRE

The International Children's Centre, Paris, was set up to study problems of childhood, to give instruction on certain matters affecting child care, and to serve as an international centre for documentation in pædiatrics. It is jointly financed by UNICEF and the French Government, and staffed almost entirely by French nationals, though its Technical Advisory Committee is international. The Centre may be said to represent the delegation by the United Nations to France of work of international significance, with international advice.

The latest Annual Report of the Centre shows that its 1953 activities include courses on prevention of tuberculosis in the young child, on social rehabilitation of physically handicapped children, on social pædiatrics, and on peri-natal problems, and research on BCG vaccination and whooping cough, together with social studies and the publication of a monthly journal, the *Courrier* and other documents.

Further information can be obtained from the International Children's Centre, Chateau de Longchamp, Paris 16e, France.

GROWING UP FASTER

The anatomists are giving testimony in favour of the belief that children are growing up faster. Clements (*Arch. Dis. Childhood*, **29**: 147, 1954) produces evidence from two independent schools in England that 99% of boys will have stopped growing at the age of 19 years eight months, whereas 99% of girls will have reached physical maturity at 18 years 10½ months. In a similar social group 80 years ago the figures were 20 years six months and 19 years seven months for boys and girls respectively. In view of the increase in size of children during the last few decades, this must mean a more rapid rate of growth than formerly. There is a wider variation in the age at which the growth of a collection of girls stops (spread in 90% over 3 years 8.6 months) than in the age of arrest in boys (2 years 8.7 months.)

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Canad. M. A. J.
July 1954, vol. 71

WORLD DISTRIBUTION OF RICKETTSIOSES

Students of rickettsial diseases will be interested in a map of the world distribution of these infections, prepared from a wide range of sources by the American Geographical Society, Broadway at 156th Street, New York 32 (price $1.25 folded, $1.50 flat). The only two diseases affecting Canada are Q fever in the east (mainly the St. Lawrence valley) and tick-borne typhus in Saskatchewan, Alberta and British Columbia.

REFORM OF THE NATIONAL HEALTH SERVICE IN BRITAIN

The Council of the British Medical Association has had before it for consideration a scheme for the restoration to medical practitioners of the right to buy and sell the goodwill of practices, as was done before 1948. Having considered all aspects of the matter, the Council now recommends to the Representative Body:

"That in view of (a) the practical difficulties of implementing the proposed scheme for the right to buy and sell goodwill; (b) the high capital outlay required by young practitioners to launch into practice; (c) the divided opinion in the profession as to the desire to introduce such a scheme, and (d) the known political resistance to any such proposal, no further action be taken."

PARADOX IN TASMANIA

An interesting situation has arisen in relation to the hospital services of Tasmania, which is causing some difficulty to the Council of the Tasmanian Branch of the B.M.A. It appears from an editorial in the Medical Journal of Australia (*M. J. Austral.*, 1: 523, 1954) that the public hospitals of Tasmania are controlled by the State and open to anyone without a means test. For some years, the visiting specialist staff in the two main centres of Hobart and Launceston were paid for attendance on a sessional basis, but about two years ago payment was stopped, probably as an economy measure on the part of the Tasmanian Government. Hence the absurd situation has arisen in these two towns that by giving honorary service to all people in public hospitals, whatever their income, the specialists are really competing against themselves in private practice.

To make matters more ridiculous, the government is actually trying to induce, on promise of sessional payments and permission to do private practice, specialists to come and work in other areas of the island. It would not seem possible for such a paradox to exist, but it does. It could also happen elsewhere.

CANADIAN SOCIETY FOR THE STUDY OF FERTILITY

Research and therapy in human reproduction are fundamental needs today. Reproductive wastage probably outranks all other causes of death. One in ten couples are involuntarily infertile. Each year in the U.S.A. alone over 300,000 desired children are not born and not even conceived. One in five pregnancies ends in spontaneous abortion or miscarriage; over 400,000 spontaneous abortions and miscarriages occur yearly in the U.S.A. alone. Death due to premature birth occurred over 31,000 times in the U.S.A. in 1945. (From "Research in Human Reproduction," a pamphlet prepared by the Planned Parenthood Federation of America in Collaboration with the National Committee on Maternal Health and the Committee on Human Reproduction of the National Research Council.)

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Pantothenic Acid	8.33 mg.

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Since Vi-Syneral Vitamin Drops cost no more — you might as well give the best.

Samples and detailed literature on request

u. s. vitamin corporation of canada, ltd.
Arlington-Funk Laboratories, division
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Nine physicians and two doctors of veterinary medicine met in Toronto on May 5, 1953, to form a Committee for the Study of Fertility. A further organization meeting was held in New York City on May 27 during the First World Congress on Fertility and Sterility. This meeting was attended by 26 physicians and two doctors of veterinary medicine from seven provinces.

The aims of the Society are to promote investigative and educational work in the field of reproduction and to evaluate diagnostic methods and therapy.

The Canadian Society for the Study of Fertility was founded officially at a meeting of the Board of Directors in Toronto on July 1, 1953. The following are the officers. President—L. J. Harris, M.D., F.R.C.S.[C], Toronto; Vice-President—M. M. Braunstein, M.D., Montreal; Secretary-Treasurer—R. J. McDonald, D.V.M., Woodstock, Ont.; Directors—E. V. Shute, M.B., F.R.C.S.[C], London, Ont.; Prof. C. A. V. Barker, D.V.M., M.Sc., Guelph, Ont.; Prof. J. Ross Vant, M.D., F.R.C.S.[C], Edmonton, Alberta; Joseph Tanzman, M.D., Saint John, N.B.

The first annual meeting of the C.S.S.F. will be held in Montreal on September 30 and October 1 and 2, 1954. Inquiries should be addressed to the Secretary.

GROWTH HORMONE SYMPOSIUM

A 3-day International Symposium on the Hypophyseal Growth Hormone, Its Nature and Actions is being sponsored by the Henry Ford Hospital and the Edsel B. Ford Institute for Medical Research. The Symposium will be held in the New Clinic Building Auditorium of the Henry Ford Hospital, October 27, 28 and 29, 1954.

Formal presentations and discussions will cover the following aspects of growth hormone investigation: bioassay, preparation and physicochemical properties of growth hormone; effects of growth hormone on certain structures such as the mammary gland, skeletal system, connective tissue, Islets of Langerhans, kidneys, gastrointestinal tract and tissue cultures; growth hormone and energy sources; the effect of growth hormone on cellular systems; the influence of growth hormone on lactation; and its metabolic effects in man.

Interested persons should write the Programme Committee, Henry Ford Hospital, Detroit 2, Michigan. Invitations will be sent to as many persons as possible.

Celebration by the Dionne quintuplets of their 20th birthday on May 28 meant another milestone in the triumph of the famed quintet over incalculable odds, according to statisticians of the Metropolitan Life Insurance Company. In all medical history, it is noted, the Dionnes and the Diligentis of Argentina, who will be 11 years old on July 15, are the only examples of quintuplets who were born alive and survived more than a short time after birth. Other sets of quintuplets have been reported, but in each instance at least one of the babies either was stillborn or lived only a short time.

All instances of multiple births, even twins, are relatively infrequent. Twins occur in the United States in one out of every 92 confinements, triplets once in about 9,600 confinments, and quadruplets once in about 657,000 confinements.

FEDERAL GRANT SUPPORTS N.B. HEALTH LABORATORY SERVICES

Further federal aid for New Brunswick's Health Services has been announced in the form of a National Health Programme grant of $44,482.58 to help the province extend its laboratory activities. The funds have been provided under terms of the Programme's Laboratory and Radiological Services Grant. They will assist New Brunswick in improving diagnostic services generally.

The grant will be applied to the expansion of laboratory services in Saint John and establishment of a branch laboratory at Moncton, N.B.

Average length of life in the United States has reached a record high of 68 and one-half years, a gain of nearly four years in the past decade, according to vital statistics compiled by the Public Health Service of the Department of Health, Education, and Welfare. The figures are based on death rates prevailing in 1951, and are contained in life tables published this week.

Women on the average live longer, outliving men by six years. The average lifetime expected for women at birth is 71.8 years, while the average for men is 65.9 years. This difference in the life expectancies of men and women has increased sharply since 1900, when females outlived males by an average of only two years.

White women at birth have a life expectancy of 72.6 years, compared to 66.6 years for white men. Non-white groups have a shorter average life—59.4 years for non-white men, and 63.7 years for non-white women. Although white persons outlive non-whites by an average of eight years, the difference between the two groups has narrowed since 1900, when white persons lived about 15 years longer than non-whites.

Average length of life in 1951 generally showed little change from 1950. The 1951 figures are subject to small adjustments when detailed life tables for 1949-1951 become available.

GASPE HOSPITAL SUPPORTED BY FEDERAL HEALTH GRANT

Under terms of the National Health Programme a hospital construction grant of $91,203.34 has been made to Quebec in favour of a new hospital at Maria, Bonaventure county, on the Bay of Chaleur coast of Gaspe.

The funds will assist in the construction of a new building at Maria for Notre Dame de Chartres Hospital, providing 74 active treatment beds, 20 bassinets in cubicles, eight nurses' beds and a community health centre. An old wooden building at Maria is being abandoned as a hospital, with completion of the new building.

APPROVE FEDERAL GRANT TO NEW HALIFAX POLIO CLINIC

Provision of modern quarters for a Provincial Polio Clinic at Halifax, N.S., is being assisted by a federal health grant. A National Health Program contribution of $29,769.91 has been approved, under the Hospital Construction Grants, to enable Nova Scotia to go ahead with a plan to operate a central polio clinic in Halifax. This is part of a provincial programme involving also a modernly-equipped branch clinic at Antigonish and another branch clinic at Sydney, N.S. The new facilities at Halifax have been made possible through remodelling of a brick building on grounds of the old Victoria General Hospital. Part of the old hospital, and a wooden annex which formerly housed the polio clinic, were marked for demolition as fire hazards and unsuitable for hospital use.

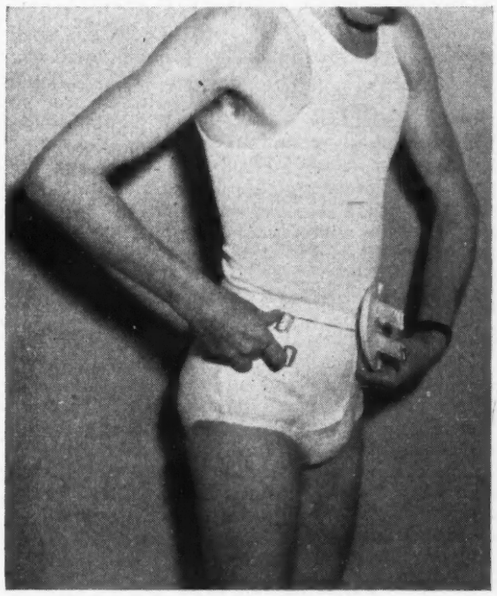
MEDICAL JOURNALS

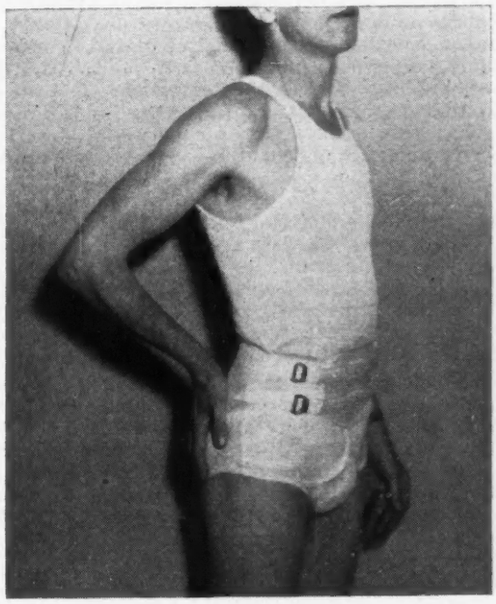
In 1900 there were about 100 medical journals, whereas today there are between 8,000 and 10,000 journals being published throughout the world; and daily new journals are being announced. This large number of journals means that numerous articles must be submitted

(Continued on page 68 of the advertising section)

Announcing

Spencer's Gordon-Barach Support for Patients with Pulmonary Emphysema





In patients with pulmonary emphysema the elastic recoil of the lung is assisted by mechanical aids to breathing. Spencer's Gordon-Barach Support was developed to provide these benefits:[1, 2]

- to support the lower abdomen
- to increase intra-abdominal pressure
- to aid expiratory ascent of the diaphragm
- to encourage diaphragmatic breathing.

As shown in the photographs, the abdominal support has two spring metal bands, the lower one of double stiffness. Worn just below the umbilicus, the support aids the expiratory ascent of the diaphragm without interfering with the lateral expansion of the lower ribs during inspiration. Thus the support helps the patient to learn and practice diaphragmatic breathing exercises which produce more efficient ventilation of the lower lobes of the lungs. It has been found that the wearing of Spencer's Gordon-Barach Support combined with the practice of diaphragamtic breathing provides considerable relief of shortness of breath on exertion.[3] (Made in stock sizes.)

Send coupon at right for more information and excerpts from Barach, A. L., "Breathing Exercises and Allied Aids to Breathing in the Treatment of Pulmonary Emphysema" Medical Record and Annals 46,323, 1952 and for a copy of Spencer's handbook on supports for abdomen, back and breasts.

1. Gordon, B. "The Mechanism and Use of Abdominal Supports and the Treatment of Pulmonary Diseases." Am. J. Med. Sc. 187:692, 1934.
2. Barach, A. L., Bicherman, H. A., and Beck, G. "Advances in the Treatment of Non-Tuberculous Pulmonary Diseases." Bull. N. Y. Acad. Med. 28:353, 1952.
3. Barach, A. L. and Beck, G. "The Value of Mechanical Methods of Aiding Respiratory Function." To be published.

SPENCER

individually designed supports

SPENCER SUPPORTS (CANADA) LIMITED
Rock Island, P.Q.
U.S.A.: Spencer, Inc., New Haven, Conn.
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☐ SEND Copy of "Physiological Basis for the Use of Spencer's Gordon-Barach Support."

☐ SEND booklet, "Spencer Supports in Modern Therapy."

Name ..... M.D.

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Canad. M. A. J.
July 1954, vol. 71

NEWS AND NOTES

(Continued from page 66 of the advertising section)

as many are rejected; if such a phenomenally large number of articles is being written the question of reliability and quality of the material presented arises. Since 1949 approximately 3,000 articles have been devoted to aureomycin and a much larger number to ACTH and cortisone. This is quite different from the days of Addison, Brodie, Buerger, Hunter, Lister, Paget, Pasteur, and Westphal who would observe and study their cases for as long as 20 years before publishing their findings. Nowadays there appears to be a race among research workers to publish. The interest seems to be in the number of articles credited to their publication list rather than in the quality and context of the work and article. One method employed to increase the number of articles published is to publish the work in bits-and-pieces as many short articles—project outline, introduction, methods and apparatus used, findings and results, conclusions and summary—thus making five short articles which could be very easily published in one, perhaps longer, article with elimination of unnecessary details. Some go so far as to submit an article to more than one editor and formerly a paper has appeared in two or more journals at the same time. Now many editors require that articles be submitted for publication to only one journal. Some authors are in the habit of resubmitting their work to successive editors, following rejections, until final acceptance.

Some of the work described is so complex and involves such complicated and detailed formulæ and equations that it is of very little interest to those outside a field of specialty and duplication of the work is very difficult. Hence discussion is limited or prevented and the results must be accepted at face value. Recently there appeared an article on the findings of a group of five patients studied by 10 investigators, a rather small number for statistical analysis or to be presented as percentages, as was done in this article.

With so many journals available one has difficulty in selecting the most satisfactory for one's particular interests. Journals published weekly tend to accumulate as one seldom has time to read them all. The most popular type of journal contains compact, concise, and carefully written articles with a minimum of tables, and with the statistics presented as graphs rather than tables of figures. Such articles will be read in whole rather than receiving a glance at the title and conclusions.

J.A.S.D.

HOW TO KILL YOUR ASSOCIATION

1. Don't attend meetings.
2. If you go, go late.
3. If the weather isn't pleasant, stay at home.
4. Don't accept any office, it's easier to criticize.
5. Never approve anything your officers or committeemen do.
6. Insist on official notices being sent you, but don't pay any attention to them.
7. Don't waste any courtesy at a meeting; it's up to your officers to take it.
8. When you don't like what's going on, say so but under no circumstances offer any constructive suggestions.
9. Devote most of your time to talking, let someone else do the work.
10. Don't co-operate with any officer or committee, make them co-operate with you.
11. Remember, you know more than anyone else about everything. If they don't agree with you they are wrong.

TWENTY-SIXTH ANNIVERSARY NUMBERS OF THE HEBREW MEDICAL JOURNAL

The Hebrew Medical Journal completed its twenty-sixth year by issuing two volumes in 1953 under the editorship of Moses Einhorn, M.D. of New York. Written in Hebrew, with English summaries, the Journal has played an important part in the creation of a medical literature and terminology in the language of the Bible. Such a terminology represents an important linguistic and scientific achievement and materially accelerated the rise of a medical literature in Hebrew. To this literature, *The Hebrew Medical Journal* is also making substantial contributions.

Among the articles in the *Spring issue*, Volume 1, 1953, is the section on "Israel and Health." Dr. Meir Yoeli of the Hebrew University in Jerusalem presents a treatise on "Tropical Diseases in Israel." In his article, Dr. Yoeli emphasizes the growing trend of tropical diseases to spread to non-tropical countries as a result of population transfers. He also gives statistical studies on the recent incidence of tropical diseases in Israel, describes the special position of the country as being "on the cross roads of infection," and concludes with a report on recent progress in controlling those diseases in Israel. Another contribution of interest is the manuscript of a medieval Hebrew treatise on "Melancholy" (12th Century), with valuable notes and commentary, by Zussmann Muntner, M.D. of Jerusalem.

In the *Fall issue*, Volume 2, 1953, is the paper by Dr. Edward Tolstoi on "Treatment of Diabetes Mellitus by the Clinical Approach." In this number is included a symposium on "Artificial Insemination." Dr. Abner I. Weisman writes on "Some Consideration on the Status of Artificial Insemination in the United States of America," and Dr. Akiba Joel discusses "Artificial Insemination in Israel." Rabbi I. Jakobovits, Chief Rabbi of Ireland gives a clarification on the attitude of Judaism, Catholicism and Protestantism towards the subject of "Artificial Insemination, Birth-Control and Abortion."

In the section called "Israel and Health," Dr. A. A. Schwarzbart deals with the increase in the number of tuberculosis cases, which followed the huge influx of newcomers from culturally and economically backward countries after the establishment of the State of Israel, and reports on the success achieved by the treatment of the malady with antibiotics.

The editorial office of *The Hebrew Medical Journal* is at 983 Park Avenue, New York 28, N.Y.

TREPONEMATOSES: A WORLD PROBLEM

A recent number of the *Chronicle* of the World Health Organization is devoted to a symposium on the treponematoses (syphilis, yaws, pinta), and the efforts being made to eradicate these disabling infections, from which a high proportion of the world's population suffers. The presentation of the material is excellent, and there is much to interest public health workers in this issue. The salient features of diagnosis, distribution and control of venereal and non-venereal treponematoses are discussed. It is emphasized that the battle against syphilis is not yet won in the civilized world. There are even signs that relaxation of efforts at control and lack of follow-up may be already leading to recrudescence in highly-developed countries. This warning has also been sounded elsewhere by American venereologists. After all, there are still at least 20 million cases loose in the world. The striking results in campaigns against non-venereal treponematoses are set out, as well as the value in dollars and cents. For example, the mass campaigns in Haiti since 1950 have increased national production by five million dollars.

The key to control is of course the production of penicillin, now exceeding 500 tons a year (70% produced in the U.S.A.). It is suggested that the world may now have enough penicillin to meet its immediate needs, though demands of many countries are still below the level of medical necessity.